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Assessing stigma in low- and middle-income countries: A systematic review of scales used with children and adolescents

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ABSTRACT

Introduction: Stigmatization contributes to health inequalities, impacting the wellbeing of children and adolescents negatively. Addressing stigmatization requires adequate measurement. Our systematic review synthesizes the content of scales used with children and adolescents in low- and middle-income countries (LMICs) across stigmas, and examines their comparability and level of cultural adaptation.

Methods: Ten databases were systematically searched combining three sets of search terms: (i) stigma, (ii) scales, and (iii) LMICs. Studies conducted in LMICs, with a sample with mean age below 18 and reporting a minimum of one stigma scale, were eligible. We allocated scale items to four frameworks: (i) dimensions, or drivers of stigmatization; (ii) target variants, or types of stigmatization; (iii) socio-ecological levels, and (iv) cross-cultural equivalence, or scale adaptation to context/population. Based on percentages, we compared scale content per age cohort, stigma status, region, and stigma category.

Results: Out of 14,348 records, we included 93 articles (112 scales). Most studies focused on adolescents (12–18 years). Twelve scales were used more than once, seven were used across regions, and four were employed for multiple stigmas. Physical health stigma, and HIV/AIDS-related stigma in particular, was measured most; mental health and multiple/generic stigmas least. Physical and mental health scales were generally more comprehensive, i.e., measuring more stigma facets. In general, scales consistently measured two of the 21 included stigma facets, namely the disruptiveness dimension and the community level. Cross-cultural equivalence was moderate; conceptual and measurement equivalence were high.

Discussion: Although scales were largely comparable in how they measure stigma, they failed to reflect the complexity of the stigmatization process and fell short of existing stigma frameworks and qualitative research. Stigma research with children should work towards cross-culturally validated stigma scale sets which incorporate more facets of existing stigma frameworks, thus facilitating comparability across cultural contexts and informing intervention development and evaluation.

Abbreviations: LMIC, Low- and Middle-Income Countries.

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1. Introduction

Half a century ago, Goffman (1963) defined stigma as "an attribute that is deeply discrediting" (p.3). Stigma arises from convergence of components including labeling, stereotyping, separation, devaluation, and discrimination, within the context of societal power imbalance (Link and Phelan, 2001) and local rules (Pescosolido et al., 2008). It is one of the main causes of population health inequalities (Hatzenbuehler et al., 2013). Negative consequences of stigmatization exacerbate the health conditions which contributed to stigmatization in the first place, leading to a vicious cycle of social marginalization and worsening health (e.g., Maulik et al., 2019; Rao et al., 2007; Skinner and Mfecane, 2004). The deleterious effects of stigma have been widely documented, such as delayed help-seeking (Mokaya et al., 2018; Schnyder et al., 2017), negative impact on mental health (Alimoradi et al., 2020; Cluver et al., 2008) and illness management (Nyblade et al., 2021; Rao et al., 2007), and reduced quality of life (Degnan et al., 2021).

Stigmatization might manifest and impact children and adolescents differently, due to their different, sometimes lower, status in society and their still developing cognitive capacities (Heary et al., 2017). Past studies suggest that stigmatizing experiences, beliefs, and actions can indeed be different for children and adolescents compared to adults (Deacon and Stephney, 2007; Parcesepe and Cabassa, 2013). How adults talk to children about stigmatized characteristics such as mental illness can unwittingly shape their perceptions and reinforce stigmatization (Mueller et al., 2016). While risk factors and symptom presentation may vary across life stages (Kane et al., 2019), experiencing stigmatization early in life can influence one's identity and independence in the longer-term (Kaushik et al., 2016). From the age of five, children already develop the cognitive ability to identify "good" in-groups and "bad" out-groups, while concurrently learning social desirability rules (Mueller et al., 2016). Stigmatization for the same condition may differ between children and adults; for example, children with depression were perceived as more dangerous than adults with depression (Perry et al., 2007).

Despite these differences, studies exploring child and adolescent perspectives on stigmatization are still limited (DeLuca, 2020) both in high-income countries (HICs) and low- and middle-income countries (LMICs), as underlying reviews of a recent meta-review demonstrate (Jackson-Best and Edwards, 2018). This is corroborated by a review of health-related stigma outcomes in LMICs, which found that only 3% of included studies investigated children and adolescents (Kane et al., 2019) and a review that concluded that children and adolescents are underrepresented in stigma reduction interventions in LMICs (Hartog, 2020). As the majority of children and adolescents reside in LMICs (Kieling et al., 2011) and considering the impact of stigmatization, this lack of insight on the stigmatization of children is disconcerting.

One barrier to advancing understanding of stigma and implementing interventions to reduce stigma is the lack of valid and reliable instruments to assess the construct (Link et al., 2004). Assessment of stigma among children and adolescents needs to be both culturally adapted and adjusted for developmental effects in this age range characterized by rapidly changing social, cognitive, and emotional functioning. We therefore undertook a systematic review of stigma scales used with children and adolescents in LMICs, where stigmatization might manifest itself differently than in HICs due to differences in resources (Hoeft et al., 2018).

This review was guided by two complementary yet potentially conflicting conclusions from recent stigma research. First, the need to step away from a siloed view towards a more generalized perspective has been emphasized (Heijnders and van der Meij, 2006; van Brakel et al., 2019). The recent Health Stigma and Discrimination Framework (HSDF: Stangl et al., 2019) encourages looking beyond specific health conditions to amplify our collective ability to address stigma effectively. A step further would be looking beyond *all* stigmatized characteristics, thus across all individual attributes which could lead to stigmatization. The use of generic scales – measures applicable across stigmatized characteristics - would facilitate comparison, development, and exploration of intersectionality (Rao et al., 2019; van Brakel et al., 2019). An earlier review of quantitative and qualitative health-related stigma instruments (van Brakel, 2006) stated that, regardless of the stigmatized characteristics, studies generally associated stigma with similar negative effects (e.g., anxiety, marital problems), referenced similar domains of life (e.g., family relations, social life), and used similar items.

Second, recent stigma research has emphasized the importance of cultural fit (Mascayano et al., 2020), with stigmatization largely embedded in cultural contexts (Weiss et al., 2006). Researchers have identified a paucity of cultural adaptation in stigma reduction research (Rao et al., 2019; Mascayano et al., 2020). Additionally, reviews found that many scales used in stigma research in LMICs often originated in HICs (Yang et al., 2014b). As different cultures can have different explanatory frames of reference (Abdullah and Brown, 2011; Semrau et al., 2015) and with stigma being socially constructed and reinforced (Yang et al., 2007), it cannot be assumed that the meaning of stigma scale items is equivalent across cultures. It is imperative to establish cross-cultural equivalence of scales, by looking at different levels where measurement error and cultural bias can affect an individual's understanding of, and responses to, stigma items: conceptual, item, semantic, operational and measurement levels (Stevelink and van Brakel, 2013). Examination of these levels can ensure scale suitability for use in multiple cultures.

In this light, our systematic review aimed to: (i) identify stigma scales used with children and adolescents in LMICs across stigmatized characteristics; (ii) compare scale content, which we hypothesize to be relatively similar; (iii) assess cross-cultural equivalence and explore psychometric properties of included scales; (iv) provide recommendations for further development and use of stigma scales with children and adolescents.

2. Methods

This review was conducted according to the PRISMA guidelines (Page et al., 2021). The protocol was registered in the International Prospective Register of Systematic Reviews (PROSPERO; #CRD42020133242).

2.1. Search and screening strategy

We systematically searched Ovid Global Health, Ovid EMBASE Classic, EMBASE, Ovid Medline, PsycINFO, ERIC, Cochrane, Social Policy and Practice, Popline and CINAHL Plus with Full Text on April 23, 2019. The search was updated on November 3, 2020. The Popline database was retired before the second search. Additionally, bibliographies of all identified systematic reviews were screened for any relevant articles, using the same criteria (see Supplementary Text 3 for the systematic reviews).

Key search terms were categorized as follows: (1) main topic (stigma); (2) focus (scale), and (3) setting (LMIC). The full search strategy can be found in Supplementary Text 1. Records were imported into Rayyan (Ouzzani et al., 2016). After removing duplicates, LG screened the titles and abstracts for inclusion/exclusion, while KH blindly screened a random 10% sample of the articles, with an inter-rater agreement of 91%. The full text of eligible records was screened in the second phase following a similar procedure (inter-rater agreement of 91%). All conflicts were resolved through discussion [LG; KH].

2.2. Eligibility criteria

Peer-reviewed journal articles were considered if they measured stigma in LMICs using at least one quantitative measure. We included any measure with one or more quantitative questions (i.e., closed

Table 1
Definition of stigma categories.

Health-related[a]		Non-health-related[b]	
Physical health	Mental health	Social identity	Demographic
Due to a physical health condition, like HIV/AIDS, albinism, or filariasis	Due to a mental health or neurological condition, like schizophrenia or epilepsy	Due to a social identity, either self-chosen or inflicted, like using contraceptives or being a former child soldier	Due to demographic characteristics, like ethnicity, nationality, race, age, sex, gender, or sexual orientation
Multiple stigmas: Any combination of two or more intersecting stigma labels.			

Note.
[a] Stigma due to health conditions (Stangl et al., 2019).
[b] Stigma due to reasons other than health conditions.

answers) assessing stigmatization due to one or more stigmatized characteristics in the context of power imbalance. We used the World Bank Country and Lending Groups (2020) classification to distinguish between LMICs and HICs based on each country's designation for the year in which the data had been collected. Only studies where the respondents were children and adolescents (mean age <18) were included. Studies with both underage and adult samples were only included if their data were analyzed separately. Where a mean age or the full items of the stigma scale were unavailable/incomplete, authors were contacted by sending one initial request via email/ResearchGate and a minimum of one reminder two weeks later. We excluded incomplete scales as all scale items are required to assess its full content. Studies with multiple stigma scales were included if all items were available for at least one scale. Additionally, studies were eligible if they were published in English, French, Dutch, German, Spanish, or Romanian. Book chapters, dissertations, conference abstracts, gray literature, and reviews were excluded. Other exclusion criteria included being off-topic (e.g., studies from other research fields, such as genetics or non-human studies) or retracted.

2.3. Data extraction and synthesis

Data were manually extracted in Excel [LG; KH], detailing study (e.g., country, study region) and sample characteristics (e.g., mean age, stigma status - whether participants were people with lived stigma experience [PWLE], part of the general population, or a mixed group). Regarding scale characteristics, we recorded the number of items, the response options, presence of a vignette, scoring, and cut-off. We also recorded the stigmatized characteristic a study focused on. These were clustered into health-related and non-health-related stigma. Health-related stigma was further divided into the categories of physical and mental health stigma, and the latter into the demographic and social identity stigma categories. If the study focused on generic or multiple stigmas, it was allocated to the multiple stigma category (see Table 1). Any questions arising during extraction of study characteristics were discussed and agreed upon [LG; KH].

Informed by the HSDF (Stangl et al., 2019), three theoretical frameworks (see Table 2) were employed to synthesize the data and facilitate comparison across stigmatized characteristics. Items were allocated to the following frameworks: (1) target variants (Pescosolido and Martin, 2015), a taxonomy which groups stigma into either experiential (ways in which stigma can be experienced) or action-oriented (who exactly is involved in the process of stigmatization) variants; (2) socio-ecological levels (Bronfenbrenner, 1977; McLeroy et al., 1988), describing an ecological model which outlines determinants of human behaviors by grouping them into five socio-ecological levels; and (3) dimensions (Jones, 1984), features of stigma developed from the hypothesis that all stigmatized characteristics would find themselves within the dimensional framework; this was empirically demonstrated (Pachankis et al., 2018). In this review we use the term 'stigma facets' to refer to all target variants, socio-ecological levels, and dimensions.

LG and KH independently allocated all stigma items to one or more facets, per theoretical framework. The first inter-rater reliability (IRR) based on 10% of the included scales was overall good (Krippendorff's $\alpha = 0.85$; target variants, $\alpha = 0.87$ and socio-ecological levels, $\alpha = 0.85$, both good; dimensions acceptable, $\alpha = 0.74$). Any inconsistencies were resolved through discussion. An additional 10% of the scales were allocated, with an overall $\alpha = 0.91$ (target variants $\alpha = 0.96$; socio-ecological levels: $\alpha = 0.93$; dimensions $\alpha = 0.80$). As this was considered good (De Swert, 2012), remaining scales were divided across the two authors [LG; KH]. Importantly, each item was allocated at least once

Table 2
Outline of the three theoretical frameworks.

Target Variants (Pescosolido and Martin, 2015)	
Experiential	**Perceived:** awareness that a specific group is generally stigmatized by a majority. **Endorsed:** overt agreement with devaluing beliefs of a specific group. **Anticipated:** expectation that this specific group will experience prejudice. **Received:** overt discrimination encountered. **Enacted:** prejudiced actions that have been conducted.
Action-oriented	**Self:** internalization of negative perceptions. **Courtesy:** transference of stigma due to close association with a devalued individual. **Public:** stigmatization endorsed and perpetuated by the greater community. **Provider-based:** stigmatization conducted by service providers. **Structural:** stigma through official documentation such as laws and policies.
Socio-ecological levels (McLeroy et al., 1988)	
	Intrapersonal: individual-level, self-concept and attitudes. **Interpersonal:** one's social network -> (friends, family, colleagues). **Institutional:** social services and organizations -> (hospitals, schools, employers). **Community:** greater society and social environment. **Public policy:** laws and policies at any governmental level.
Dimensions (Jones, 1984)	
Original	**Concealability:** to what extent is the label perceived to be visible? **Course:** how is the label perceived to develop over time? **Disruptiveness:** to what extent is the stigma perceived to impede societal interaction or communication? **Aesthetics:** to what extent is the stigma perceived to be disgusting? **Origin:** how is the stigma perceived to be acquired? **Peril:** to what extent is the stigma perceived to be dangerous?
Added based on review	**Capacity:** to what extent is the stigma perceived to be increasing dependence and limiting a person's capacity? **Worth:** to what extent does the stigma influence the value of a person? **Immorality:** to what extent is the stigmatized individual perceived to be going against the morality standards – that what is believed to be good and right - of their culture? **Positive discrimination:** to what extent is the person with the stigma perceived to receive too much support and attention?

in each of the three frameworks but could be placed under multiple facets. When an item was deemed 'unplaceable' in a framework, the authors proposed a new facet. After all items were allocated, one author [KH] inserted all unplaceable items into an Excel sheet, and allocated them to proposed facets where feasible. This was discussed and refined with the other author [LG]. For allocated example items see Supplementary Table S1.

2.4. Cross-cultural equivalence assessment

We investigated cross-cultural equivalence of included stigma scales to examine the extent to which these scales had been adapted for the population. This analysis was only done on pre-existing scales. Ineligible scales were either newly developed, initially developed for the same population, or the reference articles reporting on that scale's cross-cultural adaptation were not accessible or legible. Information was extracted from a reference article when it was stated that the stigma scale had been previously adapted for that population.

We used the Cross-Cultural Equivalence (CCE) framework (Bowden and Fox-Rushby, 2003; Herdman et al., 1997), adapted by Stevelink and van Brakel (2013). This framework outlines five types of equivalence: a) conceptual equivalence, looking at both the theoretical framework of an article and whether stigma is conceptualized in a manner that it means something equivalent across cultures; b) item equivalence, assessing whether the relevance and acceptability of the stigma items are the same for the original and the current samples; c) semantic equivalence, looking at language differences and the appropriateness of translation procedures; d) operational equivalence, assessing whether elements such as the questionnaire or item format can be maintained across cultures; e) and measurement equivalence, reporting on a series of psychometric properties, including content validity, construct validity, and reliability. Given the societal position of our population of interest, we added age equivalence. We assessed whether articles reported adaptations of the scale for use with children and adolescents, if the scale had been originally developed for adults.

Each type of equivalence was rated with either "none/minimal", "partial", or "extensive" (see Stevelink and van Brakel, 2013 for further description of the rating process). Age equivalence was rated as extensive if the original scale had been developed for adults but clearly adapted for children, partial if reference was made to age adaptation without providing details, and none/minimal if there was no acknowledgement of the necessity to adapt the scale for children. A random 10% of the CCE articles were rated [LG; KH], with an IRR of Krippendorff's $\alpha = 0.79$. An additional 10% analysis led to $\alpha = 0.70$, with item equivalence proving most challenging. The remaining articles were split, and any uncertainties were discussed. When consensus on ratings could not be reached, additional input was requested [GKG; RP; WB].

2.5. Data analysis

The descriptive statistics are for unique scales only. For the purpose of our analysis, we define a unique scale as any scale which differs from another included scale on at least one of the following characteristics: number of items, item phrasing (allowing translation differences), age cohort, stigma status, region, or stigma category for which it was used. Multiple-use scales, scales that do not differ from already included unique scales on any characteristic, were excluded from the analysis as it would bias our synthesis. The scales were grouped according to age cohort (0–6; 7–11; 12–18 years old), stigma status (PWLE, general population, mixed), region (WHO regions), and stigmatized characteristics. Due to the high number of stigmatized characteristics with few scales, we conducted the stigmatized characteristics analyses using the categories of physical health, mental health, social identity, demographics, and multiple/generic stigma(s) (Table 1).

We calculated percentages based upon presence (score 1) or absence (score 0) of a stigma facet in any item of a scale, so percentages refer to the percentage of scales in which a stigma facet was measured by at least one item. We did not score the number of items measuring a stigma facet, as the allocated number of items does not necessarily reflect the weight of that facet. We considered a facet as being highly measured at an average of at least 75% per age cohort, stigma status, region, or stigma category. Inversely, we considered a facet as being scarcely measured at an average of 25% and below. Furthermore, we looked at which stigma facets or cohorts, statuses, regions, or categories clearly distinguished themselves from the rest. Within the stigma categories, we additionally explored physical health by splitting it into "HIV/AIDS-related stigma only" and "physical health stigma excluding HIV/AIDS".

3. Results

3.1. Literature search

The search identified 14,348 records, of which 7940 were duplicates. Through screening the remaining 6408 records on title/abstract, 5062 records were excluded. After full-text screening, another 986 articles were excluded. Excluded studies (n = 267; i.e., IAT as a measure, sample duplicates, mixed child and adult samples) are mentioned in the Supplementary Text 2. A total of 93 articles describing 112 scales were included in the theoretical framework synthesis, of which 49 articles (58 scales) were included in the CCE synthesis. See Fig. 1.

3.2. Study characteristics

Studies were grouped based on WHO regions (World Health Organization, 2019). Almost half of the studies (n = 41, 44%) were conducted in the Africa region (see Table 3 for study, sample, stigma and scale characteristics). Another 23% (n = 21) of the studies were conducted in the Western Pacific. Within these regions, most studies were conducted in China (n = 17) and South Africa (n = 10). The other studies were conducted in the regions of Eastern Mediterranean (n = 13) and Europe (n = 10), South East Asia, and the Americas (each n = 4).

3.3. Sample characteristics

Most studies (n = 77, 83%) had a population sample with a mean age between 12 and 18 years. Children with a mean age between 0 and 6 (n = 4, 4%) and 7–11 (n = 11, 12%) were underrepresented. One study (Ward, 1985) could not confidently be allocated to a mean age group, with sample ages ranging between 5 and 8 years old. The number of participants ranged from 30 to 39,664 participants. Almost half of the 112 scales (n = 54, 48%) assessed stigma in children and adolescents with lived stigma experience (PWLE), and forty (36%) in the general population. Eighteen scales (16%) were used for a combination of both populations.

3.4. Stigma characteristics

Physical health stigma was measured most (n = 43, 38%), followed by demographic stigma (n = 25, 22%). Social identity stigma (n = 20, 18%), mental health stigma (n = 17, 15%) and multiple stigmas (n = 7, 5%) were measured least (see Fig. 2 for an overview of scales per stigmatized characteristic).

3.5. Scale characteristics and psychometric properties

Of the 112 scales identified, 102 were unique. Thirty-five scales were newly developed, being informed either by items from existing scales, literature, or qualitative interviews. The scales ranged from one to forty items. Most of the scales (n = 95) comprised individual questions only; other scales had an additional text (n = 12) or image vignette (n = 5). Response options varied from dichotomous to Likert scales, multiple-choice options, or 0–100 ratings. Twenty of the unique scales reported

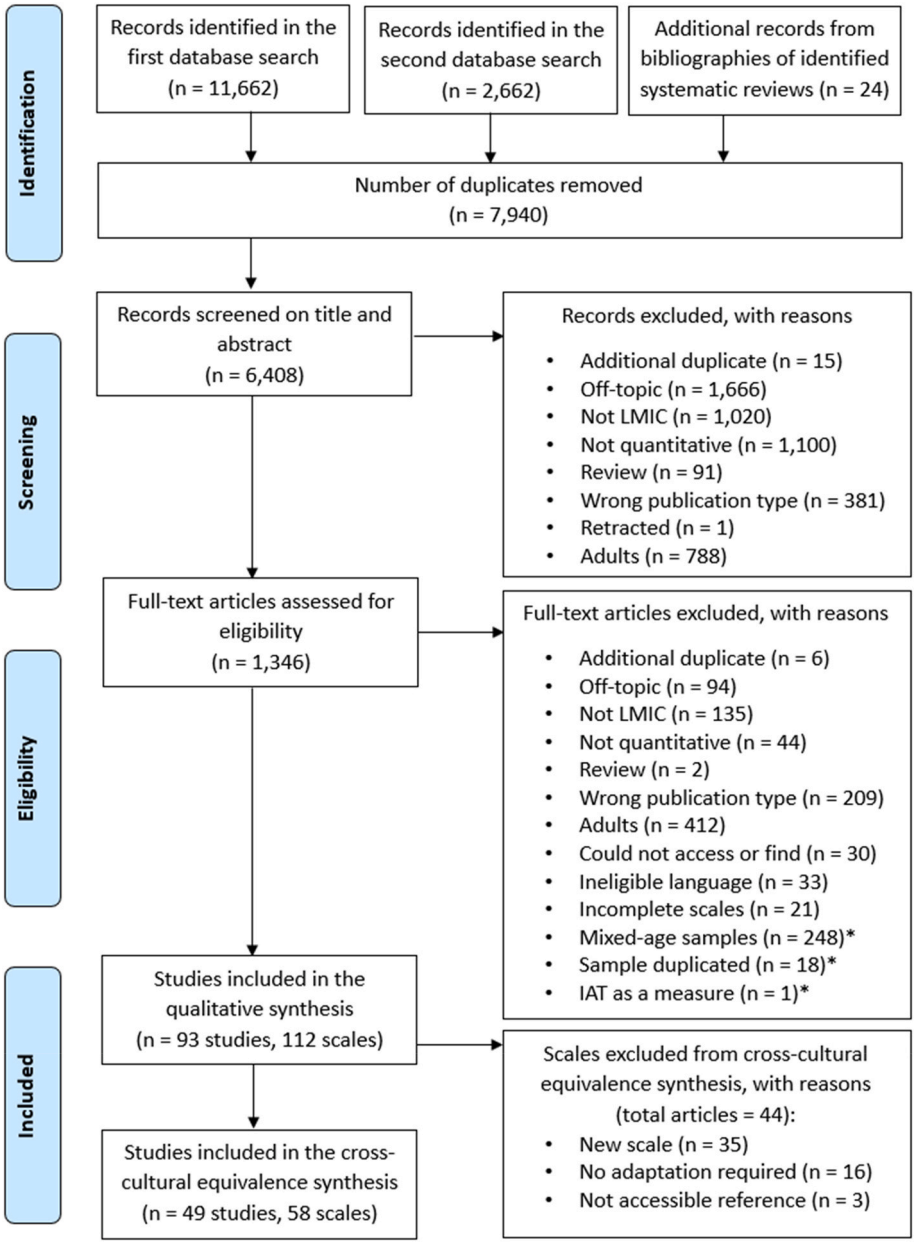

Fig. 1. PRISMA flowchart.
Note. LMIC = low- and middle-income country; IAT = Implicit Association Test; * See Supplementary Text 2.

a cut-off to indicate the presence of stigma. Fifty-eight of the 112 scales reported an internal consistency of Cronbach's $\alpha \geq 0.7$ or McDonald's $\omega \geq 0.7$. Forty-eight did not report on internal consistency and five rated below $\alpha = 0.7$. The internal consistency of six scales was not calculated, as they were one- or two-item scales. While assessing the full psychometric properties of all scales was beyond the scope of this review, additional information on the development process of the newly developed scales and the validity and reliability of all scales is provided in Supplementary Table S5.

3.6. Scales recurrence

Twelve scale names featured in more than one study, either as a unique scale due to a difference in items or population characteristics (n = 28), or a multiple-use (n = 12) scale. Table 3 is organized per scale and shows which scales were used more often.

Of the recurring scales, four were used for more than one stigmatized characteristic. The Social Distance Scale (SDS) was used across most: race/ethnicity (n = 3), mental illness (n = 2), and albinism (n = 1). The Everyday Discrimination Scale (EDS) was used to measure stigmatization generically, without attribution to specific stigmatized characteristics (n = 3). The Jacoby Stigma Scale and the Explanatory Model Interview Catalogue (EMIC) were both used for HIV/AIDS stigma (each n = 1), while the former also measured mental health (epilepsy) and the latter albinism stigma.

Seven scales were used in two or more countries. The SDS was used in Nigeria (n = 2), China, Tanzania, Croatia, and Indonesia (each n = 1). The Berger HIV Stigma Scale was used in Tanzania, Uganda, and Cambodia (each n = 1), while five other scales (EDS, Jacoby Stigma Scale, Internalized AIDS stigma scale, AIDS-related stigma scale, and EMIC) were used across two countries.

Table 3
Characteristics of the included studies.

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
Adolescents Living with HIV Stigma*	South Africa (Pantelic et al., 2020) [(3)]	HIV/AIDS	NR (10–19)	PWLE (1,059)	α = 0.74	10 items, text-vignette, 3 pt Likert (0 = never; 2 = most of the time). Sum score. Cut-off computed with two other study-included scales: 0 = no discrimination; 1 = one type of discrimination; 2 = multiple types of discrimination).
Adolescents Stigmatizing Attitudes, Beliefs and Action*	Kenya (Rehnström Loi et al., 2019) [(2)]	Abortion	16.5 (1.5)	General (1,207)	α = 0.74	18 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Sum score calculated. Higher score = higher stigma. Cut-off based on median: low (<46), high (≥46). Additional cut-off with other study-included scale, based on median: low (<65), high (≥65).
AIDS Indicator Survey (Adapted-HIV Stigma)*	Senegal (Massey et al., 2013)	HIV/AIDS	17.9 (SE = 0.04)	General (1473/1523)	NR	3 items, dichotomous (yes/no). Negative response to minimum 1 item = stigma.
AIDS-Related Stigma Scale*	Kenya (Chenneville et al., 2019)	HIV/AIDS	17.3 (3.4)	General (608)	α = 0.45–0.53	9 items, dichotomous (agree/disagree). Sum score. No cut-off.
	South Africa (Balfour et al., 2013)	HIV/AIDS	NR (grade 5–12 pupils)	General (972)	NR	9 items, dichotomous (agree/disagree). More agreement = higher stigma. No cut-off.
Anti-Gypsy Scale	Hungary (Todosijević and Enyedi, 2002)	Race/ethnicity	NR (16–17)	General (358)	α = 0.77	9 items, 5 pt Likert (1 = strongly agree; 4 = strongly disagree). Higher score = higher stigma. No cut-off.
Barriers to Insulin Treatment - Stigmatization by insulin injections subscale*	Turkey (Arda Sürücü et al., 2020)	Insulin injection (diabetes)	13.1 (2.2)	PWLE (80)	α = 0.60	3 items, 10 pt Likert (1 = completely disagree; 10 = completely agree). Mean score. Higher score = higher fear of stigmatization. No cut-off.
Beliefs Toward Mental Illness*	Malaysia (Ibrahim et al., 2020) [(2)]	Mental illness	14.6 (1.4)	General (101)	α = 0.90	21 items, 6 pt Likert (0 = completely disagree; 5 = completely agree). Higher scores = more negative beliefs. No cut-off.
Berger HIV Stigma Scale (short)*	Tanzania (Ramos et al., 2018)	HIV/AIDS	15.9 (2.3)/17.3 (2.9)	PWLE (280)	NR	10 items, 4 pt Likert (1 = strongly disagree; 4 = strongly agree). Higher score = higher stigma. No cut-off.
	Uganda (Nabunya et al., 2020)	HIV/AIDS	12.4 (2)	PWLE (702)	α = 0.74	10 items, 4 pt Likert (1 = strongly disagree; 4 = strongly agree). Higher score = higher stigma. No cut-off.
Berger HIV Stigma Scale*	Thailand (Fongkaew et al., 2014)	HIV/AIDS	NR (14–21)	PWLE (30)	α = 0.95	40 items, 4 pt Likert (1 = strongly disagree; strongly agree). Mean score: higher score = higher stigma. No cut-off.
Blatant Prejudice Scale*	Costa Rica (Rodríguez-García and Wagner, 2009)	Race/ethnicity	16.5 (1.9)	General (408)	α = 0.74/0.76	10 items, text-vignette, 4 pt Likert (1 = strongly disagree; 4 = strongly agree/1 = very different; 4 = very similar/1 = very bothered; 4 = not bothered at all). No scoring/cut-off.
Brief Stigma Inventory	South Africa (Cluver and Orkin, 2009)	HIV/AIDS	NR (10–19)	Mixed (973)	α = 0.88	4 items, text-vignette, 3 pt Likert (0 = not at all; 2 = often). No cut-off.
Child Stigma Scale*	Turkey (Köse and Çelebioğlu, 2018)	Epilepsy	NR (9–16)	PWLE (85)	α = 0.95	8 items, 5 pt Likert (1 = never; 5 = quite frequently). Mean score: higher score = higher stigma. No cut-off.
Children's Ratings of Young and Old Adults	China (Davidson et al., 2008) [(2)]	Age	6.6 (NR), 10.4 (NR)	General (64)	NR	Image-vignettes of adults (4 ages) rated on 12 adjectives, 5 pt Likert. No scoring/cut-off.
China Education Panel Survey	China (Li and Jiang, 2018)	(Im)migration	13.6 (1.2)	PWLE (1,898)	NR	3 items, dichotomous (yes/no). Higher score = lower acceptance. No cut-off.
Community Acceptance	Sierra Leone (Betancourt et al., 2010) [(3)]	Former child soldiers	17.4 (2.4)	PWLE (152)	α = 0.89/0.90	6 items, 3 pt Likert (not/sometimes/very true). Higher score = more acceptance. No cut-off.

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Table 3 (*continued*)

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
Contraceptive Use Scale	Kenya (Rehnström Loi et al., 2019) [(2)]	Contraceptive use	16.5 (1.5)	Mixed (1,207)	NR	7 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Higher score = higher stigma. Cut-off based on median: low (<19), high (≥19). Additional cut-off with other study-included scale, based on median: low (<65), high (≥65).
Depression Stigma Scale*	Jordan (Dardas et al., 2017)	Mental illness	15 (1.5)	Mixed (2,349)	α = 0.80	18 items, 5 pt Likert (0 = strongly disagree; 4 = strongly agree). Cut-off for low/moderate/high stigma computed based on tertiles.
	Jordan (Dardas et al., 2018)	Mental illness	16 (0.5)	Mixed (88)	α = 0.73	18 items, 5 pt Likert (0 = strongly disagree; 4 = strongly agree). Cut-off for low/moderate/high stigma computed based on tertiles.
Escala de la Estigmatización de la Adolescente Embarazada	Peru (Mori-Quispe et al., 2015)	Adolescent pregnancy	16.5 (1.1)	PWLE (292)**	α = 0.78	7 items, 4 pt Likert (0 = never; 3 = always). No scoring/cut-off.
European Bullying Intervention Project Questionnaire-SEN*	Ecuador (Rodríguez-Hidalgo et al., 2019)	Disability	14.8 (1.7)	Mixed (17,309)	ω = 0.93	14 items, 5 pt Likert (1 = never; 5 = more than once/week). Cut-off: ≤3 (victimization items); ≤2 (aggression items).
Everyday Discrimination Scale*	DR Congo (Glass et al., 2018)	Generic/Multiple	NR (10–15)	Mixed (388)	α = 0.79	8 items, 3 pt Likert (never/sometimes/always). Higher score = higher stigma. No cut-off.
	DR Congo (Verelst et al., 2014)	Generic/Multiple	15.9 (1.5)	Mixed (1,305)**	NR	14 items, dichotomous (yes/no). Sum score. No cut-off.
	Sierra Leone (Betancourt et al., 2010) [(3)]	Generic scale (Option to select multiple stigmatized characteristics)	17.4 (2.4)	PWLE (152)	NR	9 items, 3 pt Likert (0 = never; 2 = always). Sum score. No cut-off.
Exclusion Subscale of Ostracism Experience Scale	China (Jiang and Ngai, 2020)	(Im)migration	11.7 (1.6)	PWLE (484)	α = 0.82	6 items, 5 pt Likert (1 = very disagree; 5 = very agree). Higher score = higher social participation. No cut-off.
Experience of Caregiving Inventory	Iran (Khesht-Masjedi et al., 2017)	Mental illness (several)	15.6 (1.6)	PWLE (113)	α = 0.65	6 items, dichotomous (yes/no). No scoring/cut-off.
Explanatory Model Interview Catalogue*	India (Vlassoff et al., 2013)	HIV/AIDS	NR (15–19)	General (186)	NR	7 items, text-vignette, dichotomous (yes/no). Cut-off: 0–2 = low; 3–6 = high.
Explanatory Model Interview Catalogue-CSS*	Tanzania (de Groot et al., 2019) [(2)]	Albinism	17 (NR)	General (337)	α = 0.78	15 items, 3 pt Likert (yes/perhaps/no). Mean score per item. No cut-off.
Family Acceptance	Sierra Leone (Betancourt et al., 2010) [(3)]	Former child soldiers	17.4 (2.4)	PWLE (152)	α = 0.93	6 items, 3 pt Likert (not/sometimes/very true). No scoring/cut-off.
Internalized AIDS-Related Stigma Scale*	Uganda (Ashaba et al., 2018)	HIV/AIDS	14.8 (1.4)	PWLE (224)	α = 0.75	6 items, dichotomous (agree/disagree). Sum score: higher score = higher stigma. Cut-off: high stigma = total score ≥75th percentile.
	South Africa (Earnshaw et al., 2018) [(2)]	HIV/AIDS	16.3 (1.7)	PWLE (250)	α = 0.77	6 items, dichotomous (agree/disagree). Sum score: higher score = higher stigma. No cut-off.
Jacoby Stigma Scale	Zambia (Elafros et al., 2015) [(2)]*	Epilepsy	15.2 (1.9)	PWLE (34)	NR	3 items, dichotomous (yes/no). Cut-off: Any yes = stigma.
	Cambodia (Barennes et al., 2014)	HIV/AIDS	NR (median age: 7)	PWLE (113)	NR	4 items, dichotomous (yes/no). Cut-off: Any yes = stigma.
Kilifi Stigma Scale of Epilepsy*	Uganda (Kirabira et al., 2018)	Epilepsy	14.9 (3.5)	PWLE (191)	NR	15 items, 3 pt Likert (0 = never; 2 = always). Sum score. Cut-off: low stigma (score <66th percentile), high stigma (score>66th percentile).
Math-Gender Stereotype Questionnaire	China (Song et al., 2017)	Gender	15.5 (0.7)	PWLE (186)**	α = 0.82	8 items, 5 pt Likert (1 = completely agree; 5 = completely disagree). Sum score: higher score = more stereotyping. No cut-off.
Multi-response Racial Attitude Scale*	Indonesia (Brown et al., 2018) [(2)]	Race/ethnicity	5.96 (8 months)	General (138 + 20)	NR	20 items (positive/negative attributes), image-vignettes. Three boxes representing ethnicity options. Scores were standardized. Higher score = more positive/

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Table 3 (*continued*)

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
						negative attribute ratings. No cut-off.
Normative Beliefs about Aggression Scale - Towards the Outgroup*	oPt (West-Bank/Gaza) (,b)	Race/ethnicity	NR (8–14)	General (600)	α = 0.92	7 items, 4 pt Likert (1 = always wrong; 4 = always okay). Higher scores = stronger support for aggression. No cut-off.
Paediatric Self-stigmatization Scale*	Pakistan (Khalil et al., 2020)	Mental illness	10 (1.7)	PWLE (110)	α = 0.78–0.85	30 items, 4 subscales. 2 subscales: 4 pt Likert (1 = disagree a lot; 4 = agree a lot); 1 subscale: 4 pt Likert (1 = very rarely; 4 = very often); 1 subscale: dichotomous (yes/no). Mean scores per item/subscale. No cut-off.
Perceived Discrimination Scale[g]	China (Yang et al., 2019)	(Im)migration	13.4 (1.1)	PWLE (410)	α = 0.87	20 items, 5 pt Likert (1 = completely disagree; 5 = completely agree). Higher score = higher discrimination. No cut-off.
	China (Xiang et al., 2018)	(Im)migration	11.7 (1.4)	PWLE (215)	α = 0.89	20 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). No cut-off.
	China (Wang and Xie, 2020)	(Im)migration (Left-behind children)	12.7 (1.9)	PWLE (406)	α = 0.92	20 items, 5 pt Likert (1 = totally disagree; 5 = totally agree). No scoring/cut-off.
	China (Liu and Zhao, 2016)	(Im)migration	13.1 (1.5)	PWLE (798)	α = 0.88	20 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Higher score = higher discrimination. No cut-off.
	China (Jia and Liu, 2017)	(Im)migration	13.3 (1.5)	PWLE (897)	α = 0.85	20 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). No scoring/cut-off.
	China (Wang et al., 2018)	(Im)migration	12.6 (0.7)	Mixed (813)	α = 0.85	20 items, 5 pt Likert (1 = never; 5 = very frequently). Higher score = higher discrimination. No cut-off.
Perceived Discrimination Scale for Migrant Children	China (Chen et al., 2014)	(Im)migration	NR (9–12)	PWLE (657)	α = 0.86	17 items, 4 pt Likert (1 = not at all true; 4 = always true). Higher score = higher discrimination. No cut-off.
Perceived Parental Sex and Discrimination Scale (Outgroup Privilege Subscale)*	Malaysia (Siah, 2015)	Gender	15.1 (1.7)	PWLE (805)	α = 0.91	7 items, 5 pt Likert (options not reported). Higher score = higher discrimination. No cut-off.
Percepción de la discriminación étnica	Costa Rica (Castro, 2005)	Race/ethnicity	16 (1.5)	Mixed (1,175)	α = 0.76/0.8	4 items, 6 pt Likert (1 = completely disagree; 6 = completely agree). Mean score: higher score = higher stigma. No cut-off.
Postsecondary student survey of disability related stigma*	Pakistan (Mushtaq et al., 2020)	Disability	14.5 (2)	PWLE (300)	α = 0.73	11 items, 5 pt Likert. Higher score = higher stigma. No cut-off.
SAFI Stigma Questionnaire (child)	Kenya (Vreeman et al., 2019)	HIV/AIDS	12.3 (1.5)	PWLE (285)	NR	18 items, dichotomous (never happened/ever happened). Scoring: Ever happened = stigma. Cut-off low/high stigma unclear.
Self-stigma for Seeking Help Scale*	Malaysia (Ibrahim et al., 2020) (2)	Mental help-seeking	14.6 (1.4)	General (101)	α = 0.75	10 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Higher score = higher stigma. No cut-off.
Self-stigma of Mental Illness Scale - Stereotype Agreement Subscale*	Kenya (Ndetei et al., 2016)	Mental illness	10.4 (2.6)	Mixed (4,585)	NR	10 items, 9 pt Likert (1 = strongly disagree; 9 = strongly agree). Higher score = higher stigma. No cut-off.
Sex Stereotype Measurement II*	Malaysia (Ward, 1985)	Gender	NR (5–8)	PWLE (80)	NR	32 items, dichotomous (girl/boy), image-vignette. No cut-off.
SHAME Measure*	Zambia (Murray et al., 2013)	Having experienced trauma	12.9 (NR)	PWLE (58)	α = 0.87	8 items, 3 pt Likert (0 = not true; 2 = very true). Cut-off: 6 = high stigma.
Social Distance Scale*	Croatia (Corkalo and Kamenov, 2003)	Race/ethnicity	16.6 (0.6)	General (155)	NR	6 items, dichotomous (yes/no). Higher score = higher social distance. No cut-off.
	Nigeria (Oduguwa et al., 2017)	Mental illness	14.9 (1.3)	General (205)	NR	4 items, 5 pt Likert. Scoring: 2 = definitely/probably; 1 = don't know; 0 = probably not/definitely not. Higher score = less stigma. No cut-off.

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Table 3 (*continued*)

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
	Tanzania (de Groot et al., 2019) [(2)]	Albinism	17 (NR)	General (337)	α = 0.93	12 items, text-vignette, 4 pt Likert (I do not have a big problem-I do have a big problem). Higher score = higher social distance. No cut-off.
	Indonesia (Brown et al., 2018) [(2)]	Race/ethnicity	5.96 (8 months)	General (138 + 20)	NR	5 items, image-vignettes (3 ethnicities), 5 pt Likert (1 = saddest face; 5 = happiest face). Mean score per ethnic group. No cut-off.
	Nigeria (Ogunlade, 1980)	Race/ethnicity	NR (14–16)	General (90)	NR	5 items, 5 pt Likert (1 = complete acceptance; 5 = complete rejection). Mean score. Higher score = higher rejection. No cut-off.
	China (Yamaguchi et al., 2014) [(2)]	Mental illness	NR (13–14)	General (294)	NR	4 items, 4 pt Likert (options not reported). Higher score = higher social distance. No cut-off.
Stereotype Assessment Task*	China (Davidson et al., 2008) [(2)]	Age	6.6 (NR), 10.4 (NR)	General (64)	N/A	8 items, choice between image-vignettes of adults (4 ages). No scoring/cut-off.
Stereotype Endorsement*	Uganda (Picho and Schmader, 2018) [(2)]	Gender	NR (14–15)	PWLE (190)	NR	3 items, 7 pt Likert (1 = strongly disagree; 7 = strongly agree). Higher score = higher stereotype endorsement. No cut-off.
Stigma Against Children Affected by AIDS	China (Zhao et al., 2010) [(2)]	HIV/AIDS	12.9 (2.2)	Mixed (755)	α = 0.88	10 items, 4 pt Likert (1 = none; 4 = most people agree). Mean score. Categorical stigma-scoring: low = bottom 25%; medium = middle 50%; high = top 25%.
	China (Domlyn et al., 2020) [(2)]	HIV/AIDS	10.5 (2)	PWLE (790)	α = 0.93	15 items, 4 pt Likert (1 = strongly disagree; 4 = strongly agree) Mean score. No cut-off.
Stigma-by-association Scale*	South Africa (Pantelic et al., 2020) [(3)]	HIV/AIDS (association)	NR (10–18)	PWLE (1,059)	α = 0.75	10 items, text-vignette, 3 pt Likert (options not reported). Variable computation with other study-included scales: 0 = no discrimination; 1 = 1 type of discrimination; 2 = multiple types of discrimination.
	South Africa (Earnshaw et al., 2018) [(2)]	HIV/AIDS (association)	16.3 (1.7)	PWLE (250)	α = 0.82	10 items, 3 pt Likert (0 = not at all; 2 = all of the time). Higher score = higher stigma. No cut-off.
	South Africa (Cluver et al., 2013)	HIV/AIDS (association)	13.5 (2.2)	Mixed (6,002)	NR	10 items, text-vignette, 3 pt Likert (0 = not at all; 2 = all of the time). Mean score. No cut-off.
	South Africa (Boyes et al., 2013)	HIV/AIDS (association)	16.9 (2.5)	Mixed (723)	α = 0.89	10 items, text-vignette, 3 pt Likert (0 = not at all; 2 = all the time). Higher score = higher stigma. No cut-off.
Stigma-by-association scale (brief)*	South Africa (Boyes and Cluver, 2013)	Orphanhood (HIV-association or not)	14.3 (2.4)/13.4 (2)	Mixed (1,025)	NR	4 items, 3 pt Likert (0 = never/not at all; 2 = very often/very much). Higher scores = higher stigma. No cut-off.
Stigma Scale of Epilepsy*	Zambia (Elafros et al., 2015) [(2)]	Epilepsy	15.2 (1.9)	PWLE (34)	NR	24 items, 4 pt Likert (not at all-totally). Sum score per latent trait. No cut-off.
Subtle Racism Anti-Black African Scale	South Africa (Holtman et al., 2005) [(2)]	Race/ethnicity	16 (1)	Mixed (119)	α = 0.53	10 items, 7 pt Likert (strongly agree-strongly disagree). Higher score = higher prejudice. No cut-off.
UNAIDS Model Questionnaire (Attitudes toward PLWHA)*	Botswana (Letamo, 2004)	HIV/AIDS	16 (NR)	General (1,511)	NR	4 items, dichotomous (yes/no). No scoring/cut-off.
Weight Self-Stigma Questionnaire*	Iran (Lin et al., 2020) [(2)]	Weight	15.8 (1.3)	PWLE (737)	α = 0.87–0.91	12 items, 5 pt Likert (options not reported). Higher score = higher stigma. No cut-off.
Weight-Related Abuse Questionnaire*	Pakistan (Munir and Dawood, 2020)	Weight	17.4 (1.5)	PWLE (200)**	α = 0.92	15 items, 7 pt Likert (0 = never; 6 = more than 20 times). Mean score. No cut-off.
Weight Bias Internalization Scale*	Iran (Lin et al., 2020) [(2)]	Weight	15.8 (1.3)	PWLE (737)	α = 0.90	11 items, 5 pt Likert (options not reported). Higher score = higher stigma. No cut-off.

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Table 3 (*continued*)

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
No name 1*	Nigeria (Adeyemo et al., 2015)	Sickle cell disease	16 (1.5)/16.6 (1.4)	Mixed (160)	NR	11 items, 5 pt Likert (1 = definitely disagree; 5 = definitely agree). Stigma cut-off: <10 = none; 10.01–15 = low; 15.01–30 = moderate; 30.01–45 = high; 45.01–50 = very high.
No name 2	South Africa (Albert and Porter, 1986)	Gender	NR (4–6)	PWLE (452)	NR	32 items, text-vignette, dichotomous (boy/girl doll). No scoring/cut-off.
No name 3*	Turkey (Bagci et al., 2020) (2)	Race/ethnicity (nationality)	11 (0.8)	General (555)	NR	7 items, 7 pt Likert (1 = not at all; 7 = very much). No scoring/cut-off.
No name 4*	Ethiopia (Bekele and Ali, 2008)	HIV/AIDS	15.9 (1.2)	General (373)	NR	23 items, 5 pt Likert (1–2 = negative; 3 = neutral; 4–5 = positive attitudes). Percentages calculated. No cut-off.
No name 5	Turkey (Bozkaya et al., 2010)	Epilepsy	13.1 (1.2)	General (851)	NR	7 items, 3 pt Likert (−1 = no; 1 = yes). Sum score: higher score = more favorable. No cut-off.
No name 6	oPt (West-Bank/Gaza) (Brenick et al., 2010)	Race/ethnicity	5.6 (0.3)/5.7 (0.4)	General (212)	NR	6 items (3 text-vignettes, 2 items/vignette), dichotomous (0 = should exclude; 1 = should not exclude). No cut-off.
No name 7	Romania (Cernat, 2001)	Race/ethnicity	16.4 (0.8)	General (92)	α = 0.77−0.92	17 items, 7 pt Likert (1 = to a small; 7 = to a large extent). No scoring/cut-off.
No name 8	Zambia (Denison et al., 2012)	HIV/AIDS	NR (11–19+)	General (2,133)	NR	4 items, dichotomous (yes/no). More positive answers = more positive attitudes. No cut-off.
No name 9 ("Enacted Stigma")	China (Domlyn et al., 2020) (2)	HIV/AIDS	10.5 (2)	PWLE (790)	α = 0.91	14 items, 5 pt Likert (1 = never happened; 5 = always happened). No scoring/cut-off.
	China (Zhao et al., 2010) (2)	HIV/AIDS	12.9 (2.2)	Mixed (755)	α = 0.88	14 items, 5 pt Likert (1 = never happened; 5 = always happened). No scoring/cut-off.
No name 10	Libya (El-Gadi et al., 2008)	HIV/AIDS	17 (1.5)	General (1,082)	NR	5 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Scoring per item. No cut-off.
No name 11	Egypt (el-Setouhy and Rio, 2003)	Filariasis/ Elephantiasis	NR (NR)	General (603)	NR	2 items, dichotomous (yes/no). No scoring/cut-off.
No name 12	Nigeria (Ezeala-Adikaibe et al., 2013)	Epilepsy	13.9 (1.9)	General (969)	α = 0.84	7 items, 4 pt Likert (strongly agree-strongly disagree). Scores ranked and converted to percentages. Cut-off: above median = positive; below median = negative.
No name 13	Nigeria (Fawole et al., 1999)	HIV/AIDS	17.6/17.8 (intervention/ control; SD NR)	General (450)	NR	10 items, 3 pt Likert (agree/ disagree/don't know). Mean score. No cut-off.
No name 14	Bangladesh (Geibel et al., 2017)	HIV/AIDS + key vulnerable populations	NR (15–19)	PWLE (183)	NR	3 items, dichotomous (yes/no). No scoring/cut-off.
No name 15	China (Ha et al., 2012)	Generic/Multiple	14.9 (0.8)	General (461)	α = 0.80/ 0.92/0.78	23 items. No response options/ scoring/cut-off.
No name 16	Tanzania (Hermenau et al., 2015)	Orphanhood	11.1 (1.9)	PWLE (89)	α = 0.62	10 items, 5 pt Likert (0 = not at all; 4 = very much). Cut-off: 1SD = low; +1SD = high.
No name 17	Turkey (Hirfanoglu et al., 2009)	Epilepsy	13.5 (3.2)	PWLE (220)	α = 0.92	6 items, 5 pt Likert (1 = nothing; 5 = a lot/often). Higher score = higher stigma. No cut-off.
No name 18	South (Holtman et al., 2005) (2)	Race/ethnicity	16 (1)	Mixed (119)	α = 0.91–0.93	15 items, 7 pt Likert (options not reported). Higher score = more positive attitudes. No cut-off.
No name 19	Russia (Lepshokova et al., 2018)	Race/ethnicity	18 (2.4)	PWLE (105)	α = 0.90	3 items, 5 pt Likert (1 = strongly disagree; 5 = strongly agree). Mean score: higher score = higher discrimination. No cut-off.
No name 20*	Kenya (Luseno et al., 2020)	HIV/AIDS	NR (15–19)	General (4,096)	α = 0.72	6 items, 3 pt Likert (0 = no; 1 = don't know; 2 = yes). Composite mean score. No cut-off.
No name 21	Zimbabwe (Mavhu et al., 2013)	HIV/AIDS	NR (median age: 14)	PWLE (229)	NR	10 items. Items 1–7: 5 pt Likert (1 = strongly agree; 4 = strongly disagree; 0 = nobody knows my HIV-status). Items 8–10: 3 pt Likert

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Table 3 (*continued*)

Scale Name[a]	Country (References)[b]	Stigmatized Characteristic	Mean Age (*SD*)[c]	Stigma Status[d,e] (*N*)	Internal Consistency[f]	Scale Properties
						(0 = never; 2 = always). No scoring/cut-off.
No name 22	oPt (West-Bank/Gaza) (Niwa et al., 2016a,)	Race/ethnicity	NR (8–14)	PWLE (600)	α = 0.69–0.79	4 items, 3 pt Likert (0 = not at all true; 2 = very true). Higher score = more negative beliefs. No cut-off.
No name 23	Nigeria (Popoola, 2011)	Generic/Multiple	16.6 (1.3)	General (658)	NR	20 items, 5 pt Likert (1 = strongly disagree; 4 = strongly agree; 0 = not sure). No scoring/cut-off.
No name 24	Russia, Hungary, Poland, Bulgaria, Belarus, Czech Republic (Poppe, 2001)	Race/ethnicity	NR (16–19)	General (625)	α = 0.68/ 0.72	12 items, attributed to nine nationalities, 0–100 rating. No scoring/cut-off.
No name 25	India (Raizada et al., 2004)	HIV/AIDS	NR (15–19)	General (1,000)	NR	11 items (options not reported). Scoring calculated in %. No cut-off.
No name 26	Ghana (Riley and Baah-Odoom, 2012)	HIV/AIDS	16.9 (NR)	General (238)	α = 0.81	30 items, dichotomous (true/ false). No scoring/cut-off.
No name 27	Uganda (Tusuubira et al., 2019)	Sickle cell disease	NR (majority <18)	General (375)	NR	7 items, dichotomous (yes/no) +not sure. Scoring calculated in %. No cut-off.
No name 28*	China (Yamaguchi et al., 2014) [(2)]	Mental illness	NR (13–14)	General (294)	α = 0.63	9 items, 3 pt Likert (0–2). Higher scores = more favorable. No cut-off.
No name 29*	China (Zhang et al., 2014) [(2)]	(Im)migration	13.5 (1.2)	PWLE (138)	α = 0.90	3 items, 7 pt Likert (options not reported). Higher score = higher discrimination. No cut-off.
No name 30*	China (Zhang et al., 2014) [(2)]	(Im)migration	13.6 (0.9)	PWLE (105)	α = 0.92	3 items, text-vignette, 7 pt Likert (options not reported). Higher score = higher discrimination. No cut-off.
			Single/Two-item Measures			
Perceived Researcher Expectations of Performance	Uganda (Picho and Schmader, 2018) [(2)]	Gender	NR (14–15)	PWLE (190)	N/A	1 item, 5 answer options (multiple-choice)
SACMEQ II Survey	Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe (Maughan-Brown and Spaull, 2014)	HIV/AIDS	NR (median age across countries:12–14)	General (39,664)	NR	2 items, text-vignette. Item A (4 options: more friendly; behave as before; avoid/shun; not sure). Binary variable (1 = stigma: shunning/avoiding; 0 = same/ more friendly behavior). Item B (3 options: No/Yes/Not sure). Binary variable (no = stigma).
No name 31	Turkey (Bagci et al., 2020) [(2)]	Race/ethnicity (nationality)	11 (0.8)	General (555)	N/A	1 item, 0 = extremely unfavorable; 100 = extremely favorable. Higher score = more negative attitude.
No name 32	South Africa (Kuhn et al., 1994)	HIV/AIDS	18 (12–30)	General (567)	N/A	1 item, dichotomous (yes/no)
No name 33	China (Li et al., 2019)	(Im)migration	12.8 (0.9)	PWLE (1,755)	N/A	1 item, dichotomous (yes/no)
No name 34	South Africa (Pantelic et al., 2020) [(3)]	HIV/AIDS	NR (10–18)	PWLE (1,059)	N/A	1 item, dichotomous (yes/no). Cut-off computed with two other study-included scales: 0 = no discrimination; 1 = 1 type of discrimination; 2 = multiple types of discrimination).

Note.

[a] Scales with an * were also assessed on Cross-Cultural Equivalence (see Supplementary Table S3).

[b] Numbers in superscript (attached to references) indicate the number of scales included in the systematic review from the same article.

[c] In instances where the mean age and/or standard deviation (*SD*) were not reported (NR), we report age range between brackets.

[d] The study population was registered as representatives from the general population (General), population with lived stigma experience (PWLE), or general population and PWLE (Mixed).

[e] The populations indicated with ** are female-only populations, the rest of the populations have mixed genders (male/female).

[f] Measured by Cronbach's α or the McDonald's (ω).

[g] This scale was used five times in China, but slightly differently named. As the items are similar, we assumed the differences in names were due to English translations. The other scale names are: *Perceived Discrimination Questionnaire for Individuals* and *Perceived discrimination scale for Chinese migrant adolescents*.

3.7. Scale characteristics per group

The 102 unique scales comprised a total of 1063 items. The differences in scoring across frameworks were analyzed by grouping the scales according to age cohort, stigma status, region, and stigma categories; Supplementary Table S2 depicts allocation of items per scale. We looked at all stigma facets (Table 2) within the: i) target variants framework (Pescosolido and Martin, 2015), a taxonomy of experiential and action-oriented stigma; ii) socio-ecological levels model (McLeroy et al., 1988), a collection of sub-systems in society; and iii) dimensions framework (Jones, 1984), referring to the drivers or triggers of stigmatization; percentages of item allocation per facet can be found in

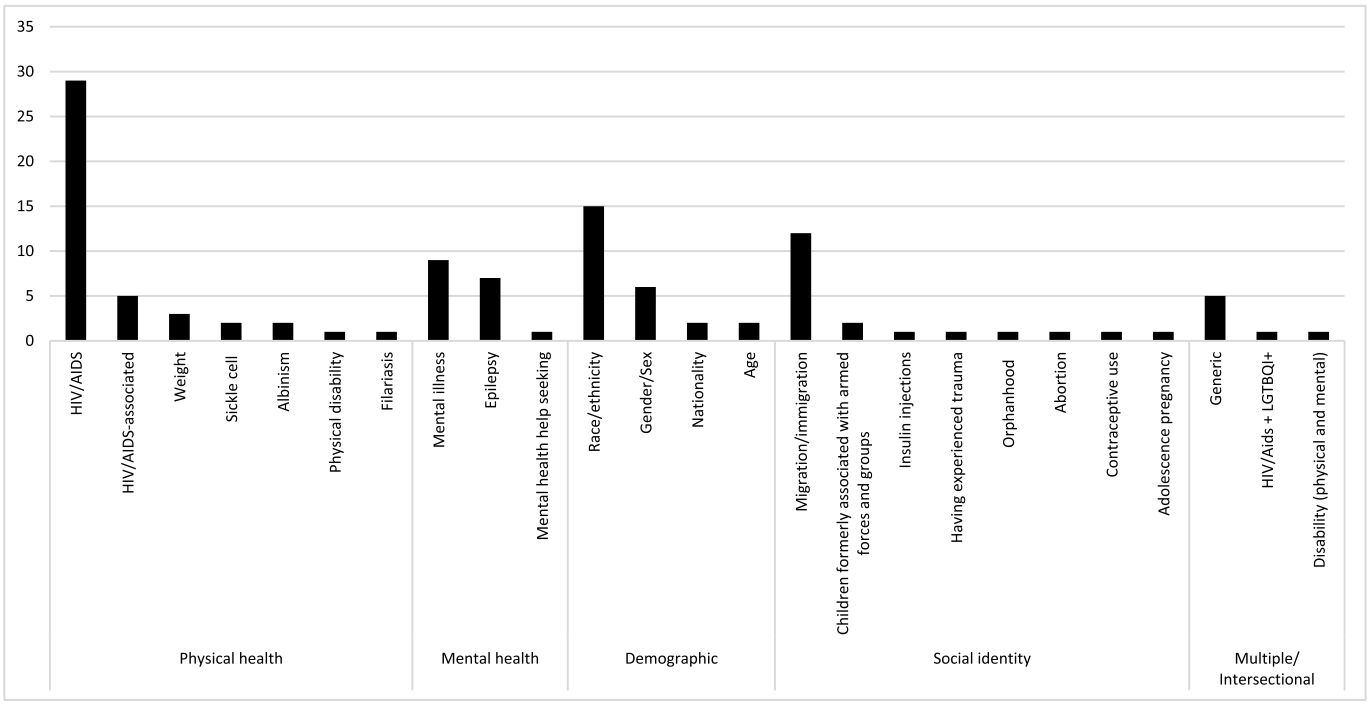

Fig. 2. Number of scales per stigma label and stigma category.

Supplementary Table S4, which will also show the few exceptions.

3.7.1. Age cohorts

When looking at age cohorts, most of the facets were measured in a similar fashion. Disruptiveness (dimension) and the community level featured highly across the cohorts (≥75%). In contrast, most of the other facets were limitedly measured across the cohorts (≤25%), while the dimension danger and the interpersonal level were measured moderately per cohort (38–56%).

3.7.2. Stigma status

Grouping according to stigma status, most facets showed a comparable pattern. Disruptiveness and community level were highly measured across the groups (≥75%). Most other facets were minimally measured (≤25%), and the interpersonal level was measured around 50% per group.

3.7.3. Regions

The scales were also similar across regions. While disruptiveness and community level were frequently measured (≥75%), most other facets were limitedly measured (≤25%) on average.

3.7.4. Stigma categories

Target variants. Across stigma categories, forty scales (39%) measured one and 33 (32%) measured two variants, indicating target variants were often measured in isolation. Physical health stigma scales included relatively more target variants and demographic scales fewer. Only one scale (multiple stigma category) measured enacted stigma.

None of the ten variants was measured frequently (≥75%) across, and eight were measured limitedly (≤25%). Two exceptions were endorsed stigma, measured in most demographic scales (84%), in two-thirds of mental health (63%), in about one-third of the physical health (39%) and multiple/generic (29%), and in only 13% of all social identity scales. Received stigma was, in contrast, measured in 71% of the generic/multiple scales, and limitedly in demographic scales (8%).

Socio-ecological levels. Thirty-nine scales (38%) measured one and 34 (33%) measured two levels. Again, physical health stigma scales included relatively more levels. Of the five socio-ecological levels, only stigma at the community level was measured consistently across the categories (≥75%). Three levels were measured infrequently on average (≤25%), while interpersonal stigma was measured in around 40% (demographic) to 68% (physical health) of the scales.

Stigma dimensions. Thirty scales (29%) measured only one dimension, and 26 (25%) two. Mental and physical health stigma scales measured relatively more dimensions. Only disruptiveness was measured frequently across categories (≥75%). Two dimensions (aesthetics, course) were measured infrequently on average (≤25%). While no demographic stigma scale measured concealability, half of the mental health scales did. Additionally, origin was measured by most mental health scales (75%) and limitedly by demographic (12%) stigma scales. Of all scales, sixty-two had at least one item that could not be allocated, totaling 273 items.

Exploration of physical health. When comparing within the physical health category (HIV/AIDS-related stigma scales only versus physical health scales excluding HIV/AIDS), none of the 29 HIV/AIDS-related stigma scales measured course, while 40% of the 9 other physical health stigma scales did. Additionally, scales focusing on HIV/AIDS measured anticipated (28%) and internalized stigma (24%) less than the physical health scales excluding HIV/AIDS (both 56%).

3.7.5. Exploration of additional dimensions

We only explored the items that could not be allocated within the dimensions framework (Jones, 1984), as 26% (n = 273) could not be placed. Through an inductive process we allocated these items to dimensions proposed by the authors [LG; KH] and presented in Table 2. We suggest four dimensions to be added to the Jones' framework; (i) 'capacity/dependence' (n = 58 items); (ii) 'worth' (n = 54); (iii) 'immorality' (n = 17); and (iv) 'positive discrimination' (n = 12). While recognizing perceived worth and immorality as fundamental to the definition of stigma itself, they are also inherently driving stigmatization. Explicitly measuring them offers valuable information otherwise not present. See Supplementary Table S1 for example items. Multiple items did not measure dimensions of stigmatization. These were items concerning 'general opinion' (n = 89), factual knowledge (n = 18),

Table 4
Summary of cross-cultural equivalence of scales (n = 58).

Equivalence Rating	Age[a]	Conceptual[b]	Item[b]	Semantic[b]	Operational[b]	Measurement[b]
Extensive	6 (10%)	14 (24%)	14 (24%)	13 (22%)	5 (9%)	9 (16%)
Partial	13 (22%)	36 (62%)	2 (3%)	9 (16%)	30 (52%)	36 (62%)
None/Minimal	15 (26%)	5 (9%)	39 (67%)	33 (57%)	20 (34%)	11 (19%)
N/A	24 (41%)	3 (5%)	3 (5%)	3 (5%)	3 (5%)	3 (5%)

Note.
[a] Extensive: original scale for adults but was age-adapted; partial: original scale for adults and some (incomplete) reference to age adaptation; none/minimal: original scale for adults and no mention of necessity to adapt for children; N/A: scale was developed for the same age group and no adaptation for age was required.
[b] Each category contains several aspects rated as "positive" (adequate efforts made to ensure equivalence), "negative" (inadequate efforts made), "indeterminate" (some efforts, but inadequately described), or "no info" (missing information). The ratings were combined into a final rating per equivalence (extensive, partial, none/minimal). Based on Stevelink and van Brakel (2013).

subjective distress (n = 9), and personal factual information (n = 6).

3.8. Cross-cultural equivalence of scales

Fifty-eight scales were identified as eligible for CCE synthesis. These scales had initially been developed for another country, cultural context, in another language, or with another age group (*marked articles in Table 3). It cannot be assumed that validity and reliability of a scale will hold when the scale is used with a different population than that for which it had been initially developed and validated. Therefore, all eligible scales were considered to require cross-cultural equivalence, which includes but is not limited to several types of validity and reliability assessments. Cross-cultural equivalence does not only assess whether scale items perform similarly across cultures (cross-cultural construct validity; Mokkink et al., 2010) but also the steps that were taken to ensure that items are relevant to a specific context (e.g., using cultural idioms of distress), that translation procedures were appropriate, and that the administration format of the scales matched the target population.

More than three quarters (n = 45, 77%) of the scales originated in HICs. Of the scales requiring cross-cultural adaptation, only one (Murray et al., 2013) was rated as extensive on all six domains of equivalence (including age), while three were rated none/minimal on all the five original domains of equivalence (Bekele and Ali, 2008; Massey et al., 2013; Ramos et al., 2018). Most scales received a partial rating on conceptual equivalence (n = 36), and 14 scales received an extensive rating. Measurement equivalence was also rated highly, with most scales receiving a partial (n = 36) and nine scales an extensive rating. The two equivalences which fared relatively poorly were item and semantic equivalence (41 and 33 scales received a none/minimal rating, respectively). Operational equivalence generally received a partial rating (n = 30), and 21 of the included scales were only minimally adapted.

Regarding the additional age equivalence, almost half of the scales (n = 24, 41%) had initially been developed for use with children and adolescents, thus not requiring age adaptation. Six scales (10%) had been developed for an adult population but were explicitly adapted for use with either children or adolescents. While 13 scales (22%) only mentioned the need for age adaptation without elaboration, 15 scales (26%) did not acknowledge the necessity of ensuring their scales were appropriate for samples younger than 18 years. Table 4 summarizes the ratings, while the ratings per scale can be found in Supplementary Table S3.

4. Discussion

This systematic review focused on stigma scales used with children and adolescents in LMICs. It offers a starting point for organizations and researchers interested in measuring stigma with this underrepresented group. We have provided a comprehensive overview of scales used across stigmatized characteristics and analyzed their content using three theoretical frameworks. Additionally, we assessed the cross-cultural equivalence of a sub-set of scales initially developed for another cultural context/population. Lastly, we explored the psychometric properties of all identified scales. These findings inform future stigma research with children and adolescents.

In our review most research focused on adolescents (12–18 years old) while younger age groups (0–6 and 7–11 years old) were underrepresented. Nevertheless, research has demonstrated the prevalence of stigma in children younger than 12 (e.g., Paxton and Damiano, 2017). The underrepresentation of these age groups is not necessarily problematic as research with younger children could be more qualitative in nature (e.g., Bhana, 2008; Nahal et al., 2019) or caregivers could respond on their child's behalf (Nayar et al., 2014). Due to our exclusion criteria, we did not analyze these studies.

We found that almost 75% of the included scales employed already existing scales. This contrasts a previous review (Fox et al., 2018), which found that out of 400 measures used to measure mental illness stigma, 304 were specifically designed for the respective study. Overall, scales in our review were infrequently used across different stigmas and studies. This echoes van Brakel et al. (2019) who postulated that stigma research has primarily examined stigmatized characteristics in siloes. We show that this pattern also extends to research on children and adolescents, with promising exceptions of four scales. First, the SDS was used in six studies across four stigmatized characteristics (i.e., race/ethnicity, mental illness, albinism). This echoes van Brakel's findings of cross-stigma use of this scale (2006). Recently, the SDS was used to address multiple health-related stigmas through one intervention (Rai et al., 2021), and to measure COVID-19 (Nochaiwong et al., 2021) and diabetes stigma (Subramaniam et al., 2021). Second, the EMIC was applied with two physical health stigmas (i.e., HIV/AIDS, albinism) in two countries. van Brakel (2006) had already identified cross-stigma use of this scale, and more recently EMIC has been applied to measure COVID-19 (Al-Zamel et al., 2021) and cancer stigma (Tseng et al., 2022). Third, the Jacoby Stigma Scale was used for two physical health stigmas (i.e., HIV/AIDS, epilepsy) in two countries. This scale had previously been used for leprosy (Moura et al., 2017; van Brakel et al., 2012) and depression stigma (Shumye et al., 2019) in other countries. The fourth scale, the EDS, used as a generic scale in the included studies in this review, was previously also employed across stigmas with a focus on race/ethnicity (Couto et al., 2012) and across social groups (Harnois et al., 2019).

In line with Heijnders and van der Meij (2006), we raise the question of how interpretable and comparable results in the field are with such a high variability in stigma measurement. For example, in the related field of child mental health in LMICs, a recent review demonstrated that the Child Behavior Checklist (a screening and assessment instrument) was used in 39% of their included studies, across regions (Maldonado et al., 2019), facilitating cross-cultural comparison.

Our analysis of the extent to which stigma facets (target variants, socio-ecological levels, dimensions) were measured across stigma categories suggests that, in general, the included scales consistently measure the same two out of 21 facets (the community level and the

disruptiveness dimension). This is in line with various conceptualizations of stigma development based on the morality standards of social and cultural contexts (Kleinman and Hall-Clifford, 2009), indicating that one's experience of stigmatization is generally influenced by one's community. In addition, theoretical frameworks (Link and Phelan, 2001) and widely used scales (SDS; van Brakel, 2006) often operationalize stigma outcomes by looking at ways in which stigma affects one's participation in various life domains, an outcome reflected in the highly measured disruptiveness dimension.

When focusing on the disparity of what is being measured, a notable pattern emerges across stigma categories: Eight from the 21 stigma facets are not measured by any demographic stigma scale. This suggests that scales in this stigma category are the least comprehensive or, alternatively, that demographic stigma might be inherently different from other stigmas. Past research appears to support the latter explanation: Demographic characteristics such as age or ethnicity are more visible than other stigmatized characteristics (Pachankis et al., 2018), thus measuring concealability and the related facet of anticipated stigma would be redundant. Additionally, it might be less fitting for demographic scales to measure internalized stigma (or the intrapersonal level) because demographic characteristics are an intrinsic part of individuals. This contrasts with stigmatized characteristics which are perceived as a consequence of one's own actions, and more likely to be associated with (internalized) shame and guilt, such as chronic obstructive pulmonary disease in relation to smoking (Woo et al., 2021), pharmaceutical opioid use (Cooper and Nielsen, 2017), or having survived sexual violence (Kennedy and Prock, 2018). Lastly, demographic characteristics are experienced by more people (e.g., increasing age) and are more common within the family and direct environment (e.g., race and ethnicity). This makes them less prone to eliciting courtesy stigma, as opposed to physical or mental health characteristics that pose a greater contagion risk by association (Bogart et al., 2008; van der Sanden et al., 2015).

Notably, the target variant enacted stigma was the least frequently measured stigma facet across all categories, with only one scale including relevant items (Rodríguez-Hidalgo et al., 2019; e.g., "I have excluded, isolated or ignored someone"). Research has shown that social desirability is correlated with lower reported stigma (Charles and Bentley, 2018; Pompeo-Fargnoli, 2020) which suggests that researchers purposely avoided enacted stigma items in order to decrease the likelihood of socially desirable responses. In line with this, Mehta et al. (2015) found that only 19% of all including studies and none of the LMIC studies included behavioral outcome measures to assess their interventions' effects.

The dimension course is absent from most scales, except for a third of mental health stigma scales. Measuring course in relatively stable demographic and social identity characteristics such as ethnicity (Pachankis et al., 2018) and orphanhood might be redundant. However, the scarcity of course items for physical health stigma and their complete absence in HIV/AIDS scales is surprising, as in qualitative studies people with HIV/AIDS have often been referred to as 'walking corpses' (Niehaus, 2007; Nyato et al., 2019). A possible explanation is that HIV/AIDS has changed from a terminal to a more chronic disease in recent years; however, access and adherence to antiretroviral therapy, demonstrated to significantly reduce HIV morbidity and mortality, remain challenging in LMICs (Scanlon and Vreeman, 2013). There is still high variability in the course of mental health problems (Supke et al., 2021). As perceptions of their course are susceptible to current events (O'Connor, 2021) and to beliefs on how mental illnesses develop (Larkings and Brown, 2018), scales measuring mental health stigma should aim to measure this dimension.

While this review shows that existing scales are highly comparable in how they measure stigma, it also suggests that many facets of stigma from existing theoretical frameworks are not being measured. Qualitative work on stigma suggests that this provides a limited perspective on stigmatization. For example, adolescents and adults who participated in a study in Bosnia-Herzegovina on Stigma against the LGBTQI+ highlighted the dimensions of perceived peril, origin, disruptiveness, concealability, and immorality (Stojisavljevic et al., 2017). This broad dimensionality of stigma was also evident in a qualitative study on tuberculosis with adolescents and adults in Nepal (Baral et al., 2007) and in the HSDF (Stangl et al., 2019). Most included scales in our study miss out on this complexity of stigma due to their limited content. There is a need to better capture this complexity.

Parallel to the research stream advocating for more scale genericity (e.g, van Brakel et al., 2019), stigma researchers have also recommended developing culture-specific scales. This is exemplified by the "what-matters-most"-principle, centering around everyday activities comprising 'personhood' locally (Yang et al., 2014a; Yang et al., 2021). To find a middle-ground – an adequate, culturally adapted generic scale set – we investigated the cross-cultural equivalence of scales. We found that more than half of the scales had been either developed or adapted for use with children and adolescents, suggesting existing scales do well on age equivalence. Despite this, for one quarter of the scales originally developed for adults the need for age adaptation was not acknowledged. Considering the high percentage of children and adolescents who experience stigma in LMICs (Britto et al., 2016; Kirabira et al., 2018), measuring stigma using age-appropriate measures is essential.

Our cross-cultural equivalence ratings echo a systematic review on participation scales (Stevelink and van Brakel, 2013) and offer similar results to those of Yang et al. (2014b). In general, researchers have tried to ensure conceptual and operational equivalence. While the internal consistency of most scales was acceptable, their overall measurement equivalence was not. Notably, limited attention was paid to assessing acceptability of items.

Furthermore, our systematic review revealed that, in the cross-cultural use of scales, standard information on translation procedures was often missing. This makes it impossible to ascertain whether translation procedures were appropriate and according to guidelines (e.g., Borsa et al., 2012; Gudmundsson, 2009). Uncertainty about translation procedures, given their contribution to the quality of cross-culturally used scales (Sireci et al., 2006), raises questions about the quality of the included scales, a concern also raised by Bergman et al. (2021).

4.1. Strengths and limitations

This review has various strengths and limitations. One limitation is that we did not extract information on which theoretical frameworks were used by the included studies in their scale selection, but only looked at the content of scale items. We excluded low-resource settings in HICs, while there might be similarities in socio-economic factors with LMICs. However, albeit challenging, individuals with stigmatized characteristics in low-resource areas of HICs might still make use of the resources and policies available at country level. We additionally excluded mixed-age studies with a mean age above 18, thus excluding studies with samples made up partly of adolescents. However, we did include a list of these studies in Supplementary Text 2. We also excluded articles for which we could not obtain all scale items after repeatedly contacting their authors. Furthermore, we did not check the references of included studies for additional articles or approach included authors for additional studies, although we hope this might have been counterbalanced by our extensive database search.

One strength of our systematic review is that we built on existing, established, and recent frameworks (see Table 2), which makes this review interpretable and useful for others. Furthermore, as advised in recent literature, we applied a non-siloed approach, going beyond health-related stigma. We searched an extensive set of databases and included articles published in other languages besides English. As there is a dearth of specific attention to children and adolescents, stigma, and LMICs, we hope that this review will bridge that gap. Adding age equivalence to an existing cross-cultural equivalence framework will

also help steer the focus towards this underrepresented population.

5. Conclusion

This review largely supported our hypothesis that the content of scales used to measure stigma with children and adolescents is relatively similar, with most scales measuring the same few stigma facets. While promising, this also showed that scales generally offer a limited view on stigmatization which does not correspond to stigma operationalizations across existing theories and qualitative research. With few exceptions, scales were infrequently used across contexts and stigmatized characteristics. Our results further demonstrated that studies insufficiently reported upon cross-cultural scale adaptation and validation. Future stigma research with children and adolescents should go beyond 'whether stigma exists' to assess a broader perspective on stigmatization, to more accurately reflect existing theoretical conceptualizations of stigma, and to inform intervention development and evaluation. Physical and, to a smaller extent, mental health stigma scales were in general the most comprehensive and could be used as a starting point for the development of comprehensive stigma scale sets. These sets should be accompanied by a rigorous cross-cultural adaptation process, to ensure local fit and validity.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2022.115121.

References

The included studies are marked with an *.

Abdullah, T., Brown, T.L., 2011. Mental illness stigma and ethnocultural beliefs, values, and norms: an integrative review. Clin. Psychol. Rev. 31, 934–948. https://doi.org/10.1016/j.cpr.2011.05.003.

* Adeyemo, T.A., Ojewunmi, O.O., Diaku-Akinwumi, I.N., Ayinde, O.C., Akanmu, A.S., 2015. Health related quality of life and perception of stigmatisation in adolescents living with sickle cell disease in Nigeria: a cross sectional study. Pediatr. Blood Cancer 62, 1245–1251. https://doi.org/10.1002/pbc.25503.

Al-Zamel, L.A., Al-Thunayan, S.F., Al-Rasheed, A.A., Alkathiri, M.A., Alamri, F., Alqahtani, F., Alali, A.S., Almohammed, O.A., Asiri, Y.A., Bashatah, A.S., AlRuthia, Y., 2021. Validation and cultural adaptation of Explanatory Model Interview Catalogue (EMIC) in assessing stigma among recovered patients with COVID-19 in Saudi Arabia. Int. J. Environ. Res. Publ. Health 18, 8261. https://doi.org/10.3390/ijerph18168261.

* Albert, A.A., Porter, J.R., 1986. Children's gender role stereotypes: a comparison of the United States and South Africa. J. Cross Cult. Psychol 17, 45–65. https://doi.org/10.1177/0022002186017001004.

Alimoradi, Z., Golboni, F., Griffiths, M.D., Broström, A., Lin, C.Y., Pakpour, A.H., 2020. Weight-related stigma and psychological distress: a systematic review and meta-analysis. Clin. Nutr. 39, 2001–2013. https://doi.org/10.1016/j.clnu.2019.10.016.

* Arda Sürücü, H., Baran Durmaz, G., Turan, E., 2020. Does type 1 diabetic adolescents' fear of stigmatization predict a negative perception insulin treatment?. Clin. Nurs. Res. 29, 235–242. https://doi.org/10.1177/1054773818815258.

* Ashaba, S., Cooper-Vince, C., Maling, S., Rukundo, G.Z., Akena, D., Tsai, A.C., 2018. Internalized HIV stigma, bullying, major depressive disorder, and high-risk suicidality among HIV-positive adolescents in rural Uganda. Glob. Mental Health 5, e22. https://doi.org/10.1017/gmh.2018.15.

* Bagci, S.C., Turnuklu, A., Tercan, M., 2020. Positive intergroup contact decreases the likelihood that prejudicial attitudes become avoidant behavioral tendencies. Eur. J. Soc. Psychol. 50, 597–613. https://doi.org/10.1002/ejsp.2646.

* Balfour, L., Farrar, T., McGilvray, M., Wilson, D., Tasca, G.A., Spaans, J.N., Mathews, C., Maziya, L., Khanyile, S., Dalgleish, T.L., Cameron, W.D., 2013. HIV prevention in action on the football field: the Whizzkids United Program in South Africa. AIDS Behav. 17, 2045–2052. https://doi.org/10.1007/s10461-013-0448-6.

Baral, S.C., Karki, D.K., Newell, J.N., 2007. Causes of stigma and discrimination associated with tuberculosis in Nepal: a qualitative study. BMC Publ. Health 7, 211. https://doi.org/10.1186/1471-2458-7-211.

* Barennes, H., Tat, S., Reinharz, D., Vibol, U., 2014. Perceived stigma by children on antiretroviral treatment in Cambodia. BMC Pediatr. 14, 300. https://doi.org/10.1186/s12887-014-0300-9.

Bekele, A., Ali, A., 2008. Effectiveness of IEC interventions in reducing HIV/AIDS related stigma among high school adolescents in Hawassa, Southern Ethiopia. Ethiop. J. Health Dev. 22, 232–241. https://ejhd.org/index.php/ejhd/article/view/507.

Bergman, A., McNabb, K., Farley, J.E., 2021. A Systematic Review and Psychometric Appraisal of Instruments Measuring Tuberculosis Stigma in Sub-saharan Africa. Stigma Health. Advance online publication. https://doi.org/10.1037/sah0000328.

* Betancourt, T.S., Agnew-Blais, J., Gilman, S.E., Williams, D.R., Ellis, B.H., 2010. Past horrors, present struggles: the role of stigma in the association between war experiences and psychosocial adjustment among former child soldiers in Sierra Leone. Soc. Sci. Med. 70, 17–26. https://doi.org/10.1016/j.socscimed.2009.09.038.

Bhana, D., 2008. Beyond stigma? Young children's responses to HIV and AIDS. Cult. Health Sex. 10, 725–738. https://doi.org/10.1080/13691050802265183.

Bogart, L.M., Cowgill, B.O., Kennedy, D., Ryan, G., Murphy, D.A., Elijah, J., Schuster, M. A., 2008. HIV-related stigma among people with HIV and their families: a qualitative analysis. AIDS Behav. 12, 244–254. https://doi.org/10.1007/s10461-007-9231-x.

Borsa, J.C., Damásio, B.F., Bandeira, D.R., 2012. Cross-cultural adaptation and validation of psychological instruments: some considerations. Paideia 22, 423–432. https://doi.org/10.1590/1982-43272253201314.

Bowden, A., Fox-Rushby, J.A., 2003. A systematic and critical review of the process of translation and adaptation of generic health-related quality of life measures in Africa, Asia, Eastern Europe, the Middle East, South America. Soc. Sci. Med. 57, 1289–1306. https://doi.org/10.1016/S0277-9536(02)00503-8.

* Boyes, M.E., Cluver, L.D., 2013. Relationships among HIV/AIDS orphanhood, stigma, and symptoms of anxiety and depression in South African youth: a longitudinal investigation using a path analysis framework. Clin. Psychol. Sci. 1, 323–330. https://doi.org/10.1177/2167702613478595.

* Boyes, M.E., Mason, S.J., Cluver, L.D., 2013. Validation of a brief stigma-by-association scale for use with HIV/AIDS-affected youth in South Africa. AIDS Care 25, 215–222. https://doi.org/10.1080/09540121.2012.699668.

* Bozkaya, I.O., Arhan, E., Serdaroglu, A., Soysal, A.S., Ozkan, S., Gucuyener, K., 2010. Knowledge of, perception of, and attitudes toward epilepsy of schoolchildren in Ankara and the effect of an educational program. Epilepsy Behav. 17, 56–63. https://doi.org/10.1016/j.yebeh.2009.10.011.

* Brenick, A., Killen, M., Lee-Kim, J., Fox, N., Leavitt, L., Raviv, A., Masalha, S., Murra, F., Al-Smadi, Y., 2010. Social understanding in young Israeli-Jewish, Israeli-Palestinian, Palestinian, and Jordanian children: moral judgments and stereotypes. Early Educ. Dev. 21, 886–911. https://doi.org/10.1080/10409280903236598.

Britto, C., Mehta, K., Thomas, R., Shet, A., 2016. Prevalence and correlates of HIV disclosure among children and adolescents in low-and middle-income countries: a systematic review. J. Dev. Behav. Pediatr. 37, 496–505. https://doi.org/10.1097/DBP.0000000000000303.

Bronfenbrenner, U., 1977. Toward an experimental ecology of human development. Am. Psychol. 32, 513–531. https://doi.org/10.1037/0003-066X.32.7.513.

* Brown, C.S., Tam, M., Aboud, F., 2018. Ethnic prejudice in young children in Indonesia: intervention attempts using multicultural friendship stories. Int. J. Early Child. 50, 67–84. https://doi.org/10.1007/s13158-018-0214-z.

* Castro, V.S., 2005. Perceived discrimination and self-esteem among ethnic majority and minority youths in Costa Rica. Interam. J. Psychol. 39, 93–106. https://www.epistemonikos.org/it/documents/ee20ee84c12db917a08acd15da1ca6fb475c5c8f.

* Cernat, V., 2001. I know what you did last millennium: ethnic stereotype and attitude change after reminding people of historical events. Curr. Res. Soc. Psychol. 7. https://crisp.org.uiowa.edu/sites/crisp.org.uiowa.edu/files/2020-04/7.2.pdf.

Charles, J.L., Bentley, K.J., 2018. Measuring mental health provider-based stigma: development and initial psychometric testing of a self-assessment instrument. Community Ment. Health J 54, 33–48. https://doi.org/10.1007/s10597-017-0137-4.

* Chen, L., Su, S., Li, X., Chi Tam, C., Lin, D., 2014. Perceived discrimination, schooling arrangements and psychological adjustments of rural-to-urban migrant children in Beijing, China. Health Psychol. Behav. Med. 2, 713–722. https://doi.org/10.1080/21642850.2014.919865.

* Chenneville, T., Gabbidon, K., Drake, H., Rodriguez, L., 2019. Preliminary findings from the HIV SEERs project: a community-based participatory research program to reduce HIV stigma among youth in Kenya. J. Assoc. Nurses AIDS Care 30, 462–473. https://doi.org/10.1097/JNC.0000000000000019.

Cluver, L.D., Gardner, F., Operario, D., 2008. Effects of stigma on the mental health of adolescents orphaned by AIDS. J. Adolesc. Health 42, 410–417. https://doi.org/10.1016/j.jadohealth.2007.09.022.

* Cluver, L., Orkin, M., 2009. Cumulative risk and AIDS-orphanhood: interactions of stigma, bullying and poverty on child mental health in South Africa. Soc. Sci. Med. 69, 1186–1193. https://doi.org/10.1016/j.socscimed.2009.07.033.

* Cluver, L., Orkin, M., Boyes, M.E., Sherr, L., Makasi, D., Nikelo, J., 2013. Pathways from parental AIDS to child psychological, educational and sexual risk: developing an empirically-based interactive theoretical model. Soc. Sci. Med. 87, 185–193. https://doi.org/10.1016/j.socscimed.2013.03.028.

Cooper, S., Nielsen, S., 2017. Stigma and social support in pharmaceutical opioid treatment populations: a scoping review. Int. J. Ment. Health Addiction 15, 452–469. https://doi.org/10.1007/s11469-016-9719-6.

* Corkalo, D., Kamenov, Z., 2003. National identity and social distance: does in-group loyalty lead to outgroup hostility?. Rev. Psychol. 10, 85–94. https://hrcak.srce.hr/file/4995.

Couto, P.F., Goto, J.B., Bastos, J.L., 2012. Blood pressure and interpersonal discrimination: systematic review of epidemiologic studies. Arq. Bras. Cardiol. 99, 956–963. https://doi.org/10.1590/S0066-782X2012005000090.

Dardas, L.A., Silva, S.G., Noonan, D., Simmons, L.A., 2018. A pilot study of depression, stigma, and attitudes towards seeking professional psychological help among Arab adolescents. Int. J. Adolesc. Med. Health 30, 20160070. https://doi.org/10.1515/ijamh-2016-0070.

* Dardas, L.A., Silva, S.G., Smoski, M.J., Noonan, D., Simmons, L.A., 2017. Personal and perceived depression stigma among Arab adolescents: associations with depression severity and personal characteristics. Arch. Psychiatr. Nurs. 31, 499–506. https://doi.org/10.1016/j.apnu.2017.06.005.

* Davidson, D., Luo, Z., Fulton, B.R., 2008. Stereotyped views of older adults in children from the People's Republic of China and from the United States. J. Intergener. Relat. 5, 6–24. https://doi.org/10.1300/J194v05n04_02.

Deacon, H., Stephney, I., 2007. HIV/AIDS, Stigma and Children: A Literature Review. HSRC Press, Cape Town.

Degnan, A., Berry, K., Humphrey, C., Bucci, S., 2021. The relationship between stigma and subjective quality of life in psychosis: a systematic review and meta-analysis. Clin. Psychol. Rev. 85, 102003 https://doi.org/10.1016/j.cpr.2021.102003.

* de Groot, T., Peters, R., van Brakel, W., Meurs, P., Jacquet, W., 2019. The cultural validation of two scales assessing albinism-related social stigma among high school students in Tanzania. DCID 30, 11–38. https://doi.org/10.5463/dcid.v30i4.861.

De Swert, K., 2012. Calculating inter-coder reliability in media content analysis using Krippendorff's Alpha. Center Pol. Com. 15. http://repository.upenn.edu/asc_papers/43.

DeLuca, J.S., 2020. Conceptualizing adolescent mental illness stigma: youth stigma development and stigma reduction programs. Adolesc. Res. Rev. 5, 153–171. https://doi.org/10.1007/s40894-018-0106-3.

* Denison, J.A., Tsui, S., Bratt, J., Torpey, K., Weaver, M.A., Kabaso, M., 2012. Do peer educators make a difference? An evaluation of a youth-led HIV prevention model in Zambian schools. Health Educ. Res. 27, 237–247. https://doi.org/10.1093/her/cyr093.

* Domlyn, A.M., Jiang, Y., Harrison, S., Qiao, S., Li, X., 2020. Stigma and psychosocial wellbeing among children affected by parental HIV in China. AIDS Care 32, 500–507. https://doi.org/10.1080/09540121.2019.1687834.

* Earnshaw, V.A., Kidman, R.C., Violari, A., 2018. Stigma, depression, and substance use problems among perinatally HIV-infected youth in South Africa. AIDS Behav. 22, 3892–3896. https://doi.org/10.1007/s10461-018-2201-7.

* El-Gadi, S., Abudher, A., Mohamed Sammud, M.P.H., 2008. HIV-related knowledge and stigma among high school students in Libya. Int. J. STD AIDS 19, 178–183. https://doi.org/10.1258/ijsa.2007.007170.

* el-Setouhy, M.A., Rio, F., 2003. Stigma reduction and improved knowledge and attitudes towards filariasis using a comic book for children. J. Egypt. Soc. Parasitol. 33, 55–65. https://europepmc.org/article/med/12739801.

* Elafros, M.A., Bowles, R.P., Atadzhanov, M., Mbewe, E., Haworth, A., Chomba, E., Birbeck, G.L., 2015. Reexamining epilepsy-associated stigma: validation of the stigma scale of epilepsy in Zambia. Qual. Life Res. 24, 1483–1489. https://doi.org/10.1007/s11136-014-0868-4.

* Ezeala-Adikaibe, B.A., Achor, J.U., Onwukwe, J., Ekenze, O.S., Onwuekwe, I.O., Chukwu, O., Onyia, H., Ihekwaba, M., Obu, C., 2013. Knowledge, attitude and practice towards epilepsy among secondary school students in Enugu, South East Nigeria. Seizure 22, 299–302. https://doi.org/10.1016/j.seizure.2013.01.016.

* Fawole, I.O., Asuzu, M.C., Oduntan, S.O., Brieger, W.R., 1999. A school-based AIDS education programme for secondary school students in Nigeria: a review of effectiveness. Health Educ. Res. 14, 675–683. https://doi.org/10.1093/her/14.5.675.

* Fongkaew, W., Viseskul, N., Suksatit, B., Settheekul, S., Chontawan, R., Grimes, R.M., Grimes, D.E., 2014. Verifying quantitative stigma and medication adherence scales using qualitative methods among Thai youth living with HIV/AIDS. J. Int. Assoc. Phys. AIDS Care 13, 69–77. https://doi.org/10.1177/1545109712463734.

Fox, A.B., Earnshaw, V.A., Taverna, E.C., Vogt, D., 2018. Conceptualizing and measuring mental illness stigma: the mental illness stigma framework and critical review of measures. Stigma Health 3, 348–376. https://doi.org/10.1037/sah0000104.

* Geibel, S., Hossain, S.M.I., Pulerwitz, J., Sultana, N., Hossain, T., Roy, S., Burnett-Zieman, B., Stackpool-Moore, L., Friedland, B.A., Yasmin, R., Sadiq, N., Yam, E., 2017. Stigma reduction training improves healthcare provider attitudes toward, and experiences of, young marginalized people in Bangladesh. J. Adolesc. Health 60, S35–S44. https://doi.org/10.1016/j.jadohealth.2016.09.026.

* Glass, N., Kohli, A., Surkan, P.J., Remy, M.M., Perrin, N., 2018. The relationship between parent mental health and intimate partner violence on adolescent behavior, stigma and school attendance in families in rural Democratic Republic of Congo. Glob. Mental Health 5, E20. https://doi.org/10.1017/gmh.2018.10.

Goffman, E., 1963. Stigma: Notes on the Management of Spoiled Identity. Prentice-Hall, Englewood Cliffs, N. J.

Gudmundsson, E., 2009. Guidelines for translating and adapting psychological instruments. Nord. Psychol 61, 29–45. https://doi.org/10.1027/1901-2276.61.2.29.

* Ha, T.H., Liu, H., Li, J., Nield, J., Lu, Z., 2012. Psychometric assessment of scales measuring HIV public stigma, drug-use public stigma and fear of HIV infection among young adolescents and their parents. AIDS Care 24, 39–45. https://doi.org/10.1080/09540121.2011.592820.

Harnois, C.E., Bastos, J.L., Campbell, M.E., Keith, V.M., 2019. Measuring perceived mistreatment across diverse social groups: an evaluation of the Everyday Discrimination Scale. Soc. Sci. Med. 232, 298–306. https://doi.org/10.1016/j.socscimed.2019.05.011.

Hartog, K, et al., Hubbard, C. D., Krouwer, A. F., Thornicroft, G., Kohrt, B. A., & Jordans, M. J, 2020. Stigma reduction interventions for children and adolescents in low-and middle-income countries: systematic review of intervention strategies, 246. Social Science and Medicinelocation|child::sb:host[1]/sb:edited-book/sb:publisher/sb:location)"_$^!"boolean(child::sb:host/sb:pages)">.

Hatzenbuehler, M.L., Phelan, J.C., Link, B.G., 2013. Stigma as a fundamental cause of population health inequalities. Am. J. Publ. Health 103, 813–821. https://doi.org/10.2105/AJPH.2012.301069.

Heary, C., Hennessy, E., Swords, L., Corrigan, P., 2017. Stigma towards mental health problems during childhood and adolescence: theory, research and intervention approaches. J. Child Fam. Stud. 26, 2949–2959. https://doi.org/10.1007/s10826-017-0829-y.

Heijnders, M., van der Meij, S., 2006. The fight against stigma: an overview of stigma-reduction strategies and interventions. Psychol. Health Med. 11, 353–363. https://doi.org/10.1080/13548500600595327.

Herdman, M., Fox-Rushby, J., Badia, X., 1997. 'Equivalence' and the translation and adaptation of health-related quality of life questionnaires. Qual. Life Res. 6, 237–247. https://doi.org/10.1023/A:1026410721664.

* Hermenau, K., Eggert, I., Landolt, M.A., Hecker, T., 2015. Neglect and perceived stigmatization impact psychological distress of orphans in Tanzania. Eur. J. Psychotraumatol. 6, 28617 https://doi.org/10.3402/ejpt.v6.28617.

* Hirfanoglu, T., Serdaroglu, A., Cansu, A., Soysal, A.S., Derle, E., Gucuyener, K., 2009. Do knowledge of, perception of, and attitudes toward epilepsy affect the quality of life of Turkish children with epilepsy and their parents?. Epilepsy Behav. 14, 71–77. https://doi.org/10.1016/j.yebeh.2008.08.011.

Hoeft, T.J., Fortney, J.C., Patel, V., Unützer, J., 2018. Task-sharing approaches to improve mental health care in rural and other low-resource settings: a systematic review. J. Rural Health 34, 48–62. https://doi.org/10.1111/jrh.12229.

* Holtman, Z., Louw, J., Tredoux, C., Carney, T., 2005. Prejudice and social contact in South Africa: a study of integrated schools ten years after apartheid. S. Afr. J. Psycmhol. 35, 473–493. https://doi.org/10.1177/008124630503500306.

* Ibrahim, N., Mohd Safien, A., Siau, C.S., Shahar, S., 2020. The Effectiveness of a Depression Literacy Program on Stigma and Mental Help-Seeking Among Adolescents in Malaysia: a Control Group Study with 3-month Follow-Up, vol. 57. Inq. (U.S.). https://doi.org/10.1177/0046958020902332.

Jackson-Best, F., Edwards, N., 2018. Stigma and intersectionality: a systematic review of systematic reviews across HIV/AIDS, mental illness, and physical disability. BMC Publ. Health 18, 1–19. https://doi.org/10.1186/s12889-018-5861-3.

* Jia, X., Liu, X., 2017. Perceived discrimination and antisocial behaviour among Chinese rural-to-urban migrant adolescents: mediating effects of social support. Int. J. Psychol. 52, 327–335. https://doi.org/10.1002/ijop.12280.

* Jiang, S., Ngai, S.S.Y., 2020. Social exclusion and multi-domain well-being in Chinese migrant children: exploring the psychosocial mechanisms of need satisfaction and need frustration. Child. Youth Serv. Rev. 116, 105182 https://doi.org/10.1016/j.childyouth.2020.105182.

Jones, E.E., 1984. Social Stigma: the Psychology of Marked Relationships. W.H. Freeman, New York.

Kane, J.C., Elafros, M.A., Murray, S.M., Mitchell, E.M., Augustinavicius, J.L., Causevic, S., Baral, S.D., 2019. A scoping review of health-related stigma outcomes for high-burden diseases in low-and middle-income countries. BMC Med. 17, 17. https://doi.org/10.1186/s12916-019-1250-8.

Kaushik, A., Kostaki, E., Kyriakopoulos, M., 2016. The stigma of mental illness in children and adolescents: a systematic review. Psychiatr. Res. 243, 469–494. https://doi.org/10.1016/j.psychres.2016.04.042.

Kennedy, A.C., Prock, K.A., 2018. I still feel like I am not normal:" a review of the role of stigma and stigmatization among female survivors of child sexual abuse, sexual assault, and intimate partner violence. Trauma Violence Abuse 19, 512–527. https://doi.org/10.1177/1524838016673601.

* Khalil, A., Gondal, F., Imran, N., Azeem, M.W., 2020. Self-stigmatization in children receiving mental health treatment in Lahore, Pakistan. Asian J. Psychiatr. 47, 101839 https://doi.org/10.1016/j.ajp.2019.10.019.

Khesht-Masjedi, M.F., Shokrgozar, S., Abdollahi, E., Golshahi, M., Zamiri, A., 2017. Exploring social factors of mental illness stigmatization in adolescents with mental disorders. J. Clin. Diagn. Res. 11, VC01–VC04. https://doi.org/10.7860/JCDR/2017/27906.10832.

Kieling, C., Baker-Henningham, H., Belfer, M., Conti, G., Ertem, I., Omigbodun, O., Rohde, L.A., Srinath, S., Ulkuer, N., Rahman, A., 2011. Child and adolescent mental health worldwide: evidence for action. Lancet 378, 1515–1525. https://doi.org/10.1016/S0140-6736(11)60827-1.

* Kirabira, J., Nakawuki, M., Fallen, R., Rukundo, G.Z., 2018. Perceived stigma and associated factors among children and adolescents with epilepsy in south western Uganda: a cross sectional study. Seizure 57, 50–55. https://doi.org/10.1016/j.seizure.2018.03.008.

Kleinman, A., Hall-Clifford, R., 2009. Stigma: a social, cultural and moral process. J. Epidemiol. Community Health 63, 418–419. https://doi.org/10.1136/jech.2008.084277.

* Köse, S., Çelebioğlu, A., 2018. Validity and reliability of Turkish version of the scales of perceived stigma for children with epilepsy and their parents. Int. J. Nurs. Sci. 5, 238–242. https://doi.org/10.1016/j.ijnss.2018.07.004.

* Kuhn, L., Steintberg, M., Mathews, C., 1994. Participation of the school community in AIDS education: an evaluation of a high school programme in South Africa. AIDS Care 6, 161–171. https://doi.org/10.1080/09540129408258627.

Larkings, J.S., Brown, P.M., 2018. Do biogenetic causal beliefs reduce mental illness stigma in people with mental illness and in mental health professionals? A

systematic review. Int. J. Ment. Health Nurs. 27, 928–941. https://doi.org/10.1111/inm.12390.
* Lepshokova, Z., Lebedeva, N., van de Vijver, F.J.R., 2018. The mediating role of identity incompatibility in the relationship between perceived discrimination and acculturation preferences in two generations of the ethnic Russian minority in the North Caucasus. Eur. J. Dev. Psychol. 15, 99–114. https://doi.org/10.1080/17405629.2017.1336433.
* Letamo, G., 2004. HIV/AIDS-related stigma and discrimination among adolescents in Botswana. Etude Popul. Afr. 19, 191–204. http://www.bioline.org.br/abstract?ep04018.
* Li, C., Jiang, S., 2018. Social exclusion, sense of school belonging and mental health of migrant children in China: a structural equation modeling analysis. Child. Youth Serv. Rev. 89, 6–12. https://doi.org/10.1016/j.childyouth.2018.04.017.
* Li, M., Mustillo, S., Wang, W., 2019. Perceived discrimination, screen use, and BMI among rural-to-urban migrant children in China: evidence from a nutrition transition context. J. Immigr. Minority Health 21, 723–730. https://doi.org/10.1007/s10903-018-0822-6.
* Lin, C.Y., Imani, V., Cheung, P., Pakpour, A.H., 2020. Psychometric testing on two weight stigma instruments in Iran: weight self-stigma questionnaire and weight bias internalized scale. Eat. Weight Disord 25, 889–901. https://doi.org/10.1007/s40519-019-00699-4.
* Liu, X., Zhao, J., 2016. Chinese migrant adolescents' perceived discrimination and psychological well-being: the moderating roles of group identity and the type of school. PLoS One 11, e0146559 https://doi.org/10.1371/journal.pone.0146559.
Link, B.G., Phelan, J.C., 2001. Conceptualizing stigma. Annu. Rev. Sociol. 27, 363–385. https://doi.org/10.1146/annurev.soc.27.1.363.
Link, B.G., Yang, L.H., Phelan, J.C., Collins, P.Y., 2004. Measuring mental illness stigma. Schizophr. Bull. 30, 511–541. https://doi.org/10.1093/oxfordjournals.schbul.a007098.
* Luseno, W.K., Field, S.H., Iritani, B.J., Odongo, F.S., Kwaro, D., Amek, N.O., Rennie, S., 2020. Pathways to depression and poor quality of life among adolescents in western Kenya: role of anticipated HIV stigma, HIV risk perception, and sexual behaviors. AIDS Behav. 25, 1423–1437. https://doi.org/10.1007/s10461-020-02980-5.
Maldonado, B.N., Chandna, J., Gladstone, M., 2019. A systematic review of tools used to screen and assess for externalising behaviour symptoms in low and middle income settings. Glob. Ment. Health 6, E13. https://doi.org/10.1017/gmh.2019.11.
Mascayano, F., Toso-Salman, J., Ho, Y.C.S., Dev, S., Tapia, T., Thornicroft, G., Cabassa, L. J., Khenti, A., Sapag, J., Bobbili, S.J., Alvarado, R., Yang, L.H., Susser, E., 2020. Including culture in programs to reduce stigma toward people with mental disorders in low-and middle-income countries. Transcult. Psychiatr. 57, 140–160. https://doi.org/10.1177/1363461519890964.
* Massey, P., Prelip, M., Rideau, A., Glik, D., 2013. School-based HIV prevention in Dakar, Senegal: findings from a peer-led program. Int. Q Community Health Educ. 33, 129–141. https://doi.org/10.2190/IQ.33.2.c.
* Maughan-Brown, B., Spaull, N., 2014. HIV-related discrimination among grade six students in nine Southern African countries. PLoS One 9, e102981 https://doi.org/10.1371/journal.pone.0102981.
Maulik, P.K., Devarapalli, S., Kallakuri, S., Tripathi, A.P., Koschorke, M., Thornicroft, G., 2019. Longitudinal assessment of an anti-stigma campaign related to common mental disorders in rural India. Br. J. Psychiatry 214, 90–95. https://doi.org/10.1192/bjp.2018.190.
* Mavhu, W., Berwick, J., Chirawu, P., Makamba, M., Copas, A., Dirawo, J., Willis, N., Araya, R., Abas, M.A., Corbett, E.L., Mungofa, S., Laver, S.M., Cowan, F.M., 2013. Enhancing psychosocial support for HIV positive adolescents in Harare, Zimbabwe. PLoS One 8, e70254 https://doi.org/10.1371/journal.pone.0070254.
McLeroy, K.R., Bibeau, D., Steckler, A., Glanz, K., 1988. An ecological perspective on health promotion programs. Health Educ. Q. 15, 351–377. https://doi.org/10.1177/109019818801500401.
Mehta, N., Clement, S., Marcus, E., Stona, A.C., Bezborodovs, N., Evans-Lacko, S., Palacios, J., Docherty, M., Barley, E., Rose, D., Koschorke, M., Shidhaye, R., Henderson, C., Thornicroft, G., 2015. Evidence for effective interventions to reduce mental health-related stigma and discrimination in the medium and long term: systematic review. Br. J. Psychiatry 207, 377–384. https://doi.org/10.1192/bjp.bp.114.151944.
Mokaya, J., McNaughton, A.L., Burbridge, L., Maponga, T., O'Hara, G., Andersson, M., Seeley, J., Matthews, P.C., 2018. A blind spot? Confronting the stigma of hepatitis B virus (HBV) infection-a systematic review. Wellcome Open Res 3. https://doi.org/10.12688/wellcomeopenres.14273.2.
Mokkink, L.B., Terwee, C.B., Patrick, D.L., Alonso, J., Stratford, P.W., Knol, D.L., Bouter, L.M., de Vet, H.C.W., 2010. The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. J. Clin. Epidemiol. 63, 737–745. https://doi.org/10.1016/j.jclinepi.2010.02.006.
* Mori-Quispe, E., Contreras-Pulache, H., Hinostroza Camposano, W.D., Lam-Figueroa, N., Huapaya-Huertas, O., Chacon-Torrico, H., Black-Tam, C., Urrutia-Aliano, D., 2015. Evaluación de un instrumento para cuantificar la estigmatización de la adolescente embarazada en el Perú. An. Fac. med., Univ. nac. mayor San Marcos 76, 141–146. https://doi.org/10.15381/anales.v76i2.11140.
Moura, S.H., Grossi, M.A., Lehman, L.F., Salgado, S.P., Almeida, C.A., Lyon, D.T., Lyon, S., Rocha, M.O.C., 2017. Epidemiology and assessment of the physical disabilities and psychosocial disorders in new leprosy patients admitted to a referral hospital in Belo Horizonte, Minas Gerais, Brazil. Lepr. Rev. 88, 244–257. https://doi.org/10.47276/lr.88.2.244.
Mueller, J., Callanan, M.M., Greenwood, K., 2016. Communications to children about mental illness and their role in stigma development: an integrative review. J. Ment. Health 25, 62–70. https://doi.org/10.3109/09638237.2015.1021899.
* Munir, M., Dawood, S., 2020. Weight stigma and disordered eating behaviors in Pakistani overweight adolescents: the mediating role of body esteem. Eat. Weight Disord. 26, 1939–1948. https://doi.org/10.1007/s40519-020-01038-8.
* Murray, L.K., Familiar, I., Skavenski, S., Jere, E., Cohen, J., Imasiku, M., Mayeya, J., Bass, J.K., Bolton, P., 2013. An evaluation of trauma focused cognitive behavioral therapy for children in Zambia. Child Abuse Negl. 37, 1175–1185. https://doi.org/10.1016/j.chiabu.2013.04.017.
* Mushtaq, M., Anjum, A., Jameel, R., Iqbal, M.N., Shahid, A.A., Dastgir, M.H.A., 2020. Stigma of disability, social phobia and self-esteem in adolescents with physical disability. J. Postgrad. Med. Inst. 34, 98–103. https://66.219.22.243/index.php/jpmi/article/view/2582.
* Nabunya, P., Byansi, W., Sensoy Bahar, O., McKay, M., Ssewamala, F.M., Damulira, C., 2020. Factors associated with HIV disclosure and HIV-related stigma among adolescents living with HIV in Southwestern Uganda. Front. Psychiatr. 11, 772. https://doi.org/10.3389/fpsyt.2020.00772.
Nahal, M.S., Axelsson, Å.B., Imam, A., Wigert, H., 2019. Palestinian children's narratives about living with spina bifida: stigma, vulnerability, and social exclusion. Child Care Health Dev. 45, 54–62. https://doi.org/10.1111/cch.12625.
Nayar, U.S., Stangl, A.L., de Zalduondo, B., Brady, L.M., 2014. Reducing stigma and discrimination to improve child health and survival in low-and middle-income countries: promising approaches and implications for future research. J. Health Commun. 19 (Suppl. 1), 142–163. https://doi.org/10.1080/10810730.2014.930213.
* Ndetei, D.M., Mutiso, V., Maraj, A., Anderson, K.K., Musyimi, C., McKenzie, K., 2016. Stigmatizing attitudes toward mental illness among primary school children in Kenya. Soc. Psychiatr. Psychiatr. Epidemiol. 51, 73–80. https://doi.org/10.1007/s00127-015-1090-6.
Niehaus, I., 2007. Death before dying: understanding AIDS stigma in the South African Lowveld. J. South Afr. Stud. 33, 845–860. https://doi.org/10.1080/03057070701646944.
* Niwa, E.Y., Boxer, P., Dubow, E.F., Huesmann, L.R., Landau, S., Shikaki, K., Gvirsman, S.D., 2016a. Negative stereotypes of ethnic outgroups: a longitudinal examination among Palestinian, Israeli Jewish, and Israeli Arab youth. J. Res. Adolesc. 26, 166–179. https://doi.org/10.1111/jora.12180.
* Niwa, E.Y., Boxer, P., Dubow, E.F., Huesmann, L.R., Shikaki, K., Landau, S., Gvirsman, S.D., 2016b. Growing up amid ethno-political conflict: aggression and emotional desensitization promote hostility to ethnic outgroups. Child Dev. 87, 1479–1492. https://doi.org/10.1111/cdev.12599.
Nochaiwong, S., Ruengorn, C., Awiphan, R., Kanjanarat, P., Ruanta, Y., Phosuya, C., Boonchieng, W., Nanta, S., Chongruksut, W., Thavorn, K., Wongpakaran, N., Wongpakaran, T., 2021. COVID-19 Public Stigma Scale (COVID-PSS): development, validation, psychometric analysis and interpretation. BMJ Open 11, e048241. https://doi.org/10.1136/bmjopen-2020-048241.
Nyato, D., Nnko, S., Komba, A., Kuringe, E., Plotkin, M., Mbita, G., Shao, A., Changalucha, J., Wambura, M., 2019. Facilitators and barriers to linkage to HIV care and treatment among female sex workers in a community-based HIV prevention intervention in Tanzania: a qualitative study. PLoS One 14, e0219032. https://doi.org/10.1371/journal.pone.0219032.
Nyblade, L., Mingkwan, P., Stockton, M.A., 2021. Stigma reduction: an essential ingredient to ending AIDS by 2030. Lancet HIV 8, e106–e113. https://doi.org/10.1016/S2352-3018(20)30309-X.
O'Connor, C., 2021. Has the COVID-19 pandemic affected lay beliefs about the cause and course of mental illness? Int. J. Environ. Res. Publ. Health 18, 4912. https://doi.org/10.3390/ijerph18094912.
* Oduguwa, A.O., Adedokun, B., Omigbodun, O.O., 2017. Effect of a mental health training programme on Nigerian school pupils' perceptions of mental illness. Child Adolesc. Psychiatr. Ment. Health 11, 19. https://doi.org/10.1186/s13034-017-0157-4.
Ogunlade, J.O., 1980. Social distance among the Yoruba of Nigeria. Soc. Behav. Pers. 8 (1), 121–123. https://doi.org/10.2224/sbp.1980.8.1.121.
Ouzzani, M., Hammady, H., Fedorowicz, Z., Elmagarmid, A., 2016. Rayyan – a web and mobile app for systematic reviews. Syst. Rev. 5, 210. https://doi.org/10.1186/s13643-016-0384-4.
Pachankis, J.E., Hatzenbuehler, M.L., Wang, K., Burton, C.L., Crawford, F.W., Phelan, J. C., Link, B.G., 2018. The burden of stigma on health and well-being: a taxonomy of concealment, course, disruptiveness, aesthetics, origin, and peril across 93 stigmas. Pers. Soc. Psychol. Bull. 44, 451–474. https://doi.org/10.1177/0146167217741313.
Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R., Glanville, J., Grimshaw, J.M., Hróbjartsson, A., Lalu, M.M., Li, T., Loder, E.W., Mayo-Wilson, E., McDonald, S., McGuinness, L.A., Stewart, L.A., Thomas, J., Tricco, A.C., Welch, V.A., Whiting, P., Moher, D., 2021. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. Br. Med. J. 372, 71. https://doi.org/10.1136/bmj.n71.
* Pantelic, M., Casale, M., Cluver, L., Toska, E., Moshabela, M., 2020. Multiple forms of discrimination and internalized stigma compromise retention in HIV care among adolescents: findings from a South African cohort. J. Int. AIDS Soc. 23, e25488 https://doi.org/10.1002/jia2.25488.
Parcesepe, A.M., Cabassa, L.J., 2013. Public stigma of mental illness in the United States: a systematic literature review. Adm. Policy Ment. Health 40, 384–399. https://doi.org/10.1007/s10488-012-0430-z.
Paxton, S.J., Damiano, S.R., 2017. The development of body image and weight bias in childhood. In: Benson, J.B. (Ed.), Advances in Child Development and Behavior, vol. 52. Academic Press Inc., San Diego, pp. 269–298. https://doi.org/10.1016/bs.acdb.2016.10.006.
Perry, B.L., Pescosolido, B.A., Martin, J.K., McLeod, J.D., Jensen, P.S., 2007. Comparison of public attributions, attitudes, and stigma in regard to depression among children

and adults. Psychiatr. Serv. 58, 632–635. https://doi.org/10.1176/ps.2007.58.5.632.
Pescosolido, B.A., Martin, J.K., 2015. The stigma complex. Annu. Rev. Sociol. 41, 87–116. https://doi.org/10.1146/annurev-soc-071312-145702.
Pescosolido, B.A., Martin, J.K., Lang, A., Olafsdottir, S., 2008. Rethinking theoretical approaches to stigma: a framework integrating normative influences on stigma (FINIS). Soc. Sci. Med. 67, 431–440. https://doi.org/10.1016/j.socscimed.2008.03.018.
* Picho, K., Schmader, T., 2018. When do gender stereotypes impair math performance? A study of stereotype threat among Ugandan adolescents. Sex. Roles 78, 295–306. https://doi.org/10.1007/s11199-017-0780-9.
Pompeo-Fargnoli, A., 2020. Mental health stigma among college students: misperceptions of perceived and personal stigmas. J. Am. Coll. Health 70 (4). https://doi.org/10.1080/07448481.2020.1784904. Advance online publication.
* Popoola, B.I., 2011. Sex stereotypes and school adolescents' sexual behaviour in Osun State, Nigeria. Sex. Educ. 11, 117–127. https://doi.org/10.1080/14681811.2011.558419.
* Poppe, E., 2001. Effects of changes in GNP and perceived group characteristics on national and ethnic stereotypes in Central and Eastern Europe. J. Appl. Soc. Psychol. 31, 1689–1708. https://doi.org/10.1111/j.1559-1816.2001.tb02746.x.
Rai, S.S., Syurina, E.V., Peters, R.M.H., Irwanto, I., Naniche, D., Zweekhorst, M.B.M., 2021. Assessing the prospect of a common health-related stigma reduction response: cross-perspectives of people living with stigmatised health conditions in Indonesia. Global Publ. Health 16, 1856–1869. https://doi.org/10.1080/17441692.2020.1850834.
* Raizada, N., Somasundaram, C., Mehta, J.P., Pandya, V.P., 2004. Effectiveness of various IEC in improving awareness and reducing stigma related to HIV/AIDS among school going teenagers. Indian J. Community Med. 29, 30–34. https://www.researchgate.net/publication/45261808.
Ramos, J.V., Mmbaga, B.T., Turner, E.L., Rugalabamu, L.L., Luhanga, S., Cunningham, C. K., Dow, D.E., 2018. Modality of primary HIV disclosure and association with mental health, stigma, and antiretroviral therapy adherence in Tanzanian youth living with HIV. AIDS Patient Care STDS 32, 31–37. https://doi.org/10.1089/apc.2017.0196.
Rao, D., Elshafei, A., Nguyen, M., Hatzenbuehler, M.L., Frey, S., Go, V.F., 2019. A systematic review of multi-level stigma interventions: state of the science and future directions. BMC Med. 17, 41. https://doi.org/10.1186/s12916-018-1244-y.
Rao, D., Kekwaletswe, T.C., Hosek, S., Martinez, J., Rodriguez, F., 2007. Stigma and social barriers to medication adherence with urban youth living with HIV. AIDS Care 19, 28–33. https://doi.org/10.1080/09540120600652303.
Rehnström Loi, U., Otieno, B., Oguttu, M., Gemzell-Danielsson, K., Klingberg-Allvin, M., Faxelid, E., Makenzius, M., 2019. Abortion and contraceptive use stigma: a cross-sectional study of attitudes and beliefs in secondary school students in western Kenya. Sex. Reprod. Health Matters 27, 20–31. https://doi.org/10.1080/26410397.2019.1652028.
* Riley, G.A., Baah-Odoom, D., 2012. Belief in a just world, generalised self-efficacy and stigma may contribute to unsafe sexual intentions via a reduced perception of vulnerability to HIV/AIDS amongst young people in Ghana. AIDS Care 24, 642–648. https://doi.org/10.1080/09540121.2011.630348.
* Rodríguez-García, J.M., Wagner, U., 2009. Learning to be prejudiced: a test of unidirectional and bidirectional models of parent-offspring socialization. Int. J. Intercult. Relat. 33, 516–523. https://doi.org/10.1016/j.ijintrel.2009.08.001.
* Rodríguez-Hidalgo, A.J., Alcívar, A., Herrera-López, M., 2019. Traditional bullying and discriminatory bullying around special educational needs: psychometric properties of two instruments to measure it. Int. J. Environ. Res. Publ. Health 16, 142. https://doi.org/10.3390/ijerph16010142.
Scanlon, M.L., Vreeman, R.C., 2013. Current strategies for improving access and adherence to antiretroviral therapies in resource-limited settings. HIV/AIDS (Auckl.) 5, 1–17. https://doi.org/10.2147/HIV.S28912.
Schnyder, N., Panczak, R., Groth, N., Schultze-Lutter, F., 2017. Association between mental health-related stigma and active help-seeking: systematic review and meta-analysis. Br. J. Psychiatry 210, 261–268. https://doi.org/10.1192/bjp.bp.116.189464.
Semrau, M., Evans-Lacko, S., Koschorke, M., Ashenafi, L., Thornicroft, G., 2015. Stigma and discrimination related to mental illness in low- and middle-income countries. Epidemiol. Psychiatr. Sci. 24, 382–394. https://doi.org/10.1017/S2045796015000359.
Shumye, S., Belayneh, Z., Mengistu, N., 2019. Health related quality of life and its correlates among people with depression attending outpatient department in Ethiopia: a cross sectional study. Health Qual. Life Outcome 17, 169. https://doi.org/10.1186/s12955-019-1233-7.
* Siah, P.C., 2015. Perceived parental sex discrimination, happiness and self-esteem: children's perspective. Vulnerable Child. Youth Stud. 10, 314–320. https://doi.org/10.1080/17450128.2015.1103925.
Sireci, S.G., Yang, Y., Harter, J., Ehrlich, E.J., 2006. Evaluating guidelines for test adaptations: a methodological analysis of translation quality. J. Cross Cult. Psychol. 37, 557–567. https://doi.org/10.1177/0022022106290478.
Skinner, D., Mfecane, S., 2004. Stigma, discrimination and the implications for people living with HIV/AIDS in South Africa. SAHARA-J (J. Soc. Aspects HIV/AIDS Res. Alliance) 1, 157–164. https://doi.org/10.1080/17290376.2004.9724838.
* Song, J., Zuo, B., Wen, F., Yan, L., 2017. Math-gender stereotypes and career intentions: an application of expectancy–value theory. Br. J. Guid. Counsell. 45, 328–340. https://doi.org/10.1080/03069885.2017.1283680.
Stangl, A.L., Earnshaw, V.A., Logie, C.H., van Brakel, W.H., Simbayi, L.C., Barré, I., Dovidio, J.F., 2019. The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. BMC Med. 17, 31. https://doi.org/10.1186/s12916-019-1271-3.
Stevelink, S.A.M., van Brakel, W.H., 2013. The cross-cultural equivalence of participation instruments: a systematic review. Disabil. Rehabil. 35, 1256–1268. https://doi.org/10.3109/09638288.2012.731132.
Stojisavljevic, S., Djikanovic, B., Matejic, B., 2017. 'The Devil has entered you': a qualitative study of Men Who Have Sex with Men (MSM) and the stigma and discrimination they experience from healthcare professionals and the general community in Bosnia and Herzegovina. PLoS One 12, e0179101. https://doi.org/10.1371/journal.pone.0179101.
Subramaniam, M., Abdin, E., Bhuvaneswari, S., AshaRani, P.V., Devi, F., Roystonn, K., Wang, P., Samari, E., Shafie, S., Vaingankar, J.A., van Dam, R.M., Lee, E.S., Sum, C. F., Chong, S.A., 2021. Prevalence and correlates of social stigma toward diabetes: results from a nationwide-survey in Singapore. Front. Psychol. 12, 692573 https://doi.org/10.3389/fpsyg.2021.692573.
Supke, M., Ferling, C., Hahlweg, K., Schulz, W., 2021. Persistence and course of mental health problems from childhood into adolescence: results of a 10-year longitudinal study. BMC Psychol 9, 1–11. https://doi.org/10.1186/s40359-021-00535-4.
* Todosijević, B., Enyedi, Z., 2002. Authoritarianism vs. cultural pressure anti-gypsy prejudice in Hungary. J. Russ. East Eur. Psychol. 40, 31–54. https://doi.org/10.2753/rpo1061-0405400531.
Tseng, W.T., Lee, Y., Hung, C.F., Lin, P.Y., Chien, C.Y., Chuang, H.C., Fang, F.M., Li, S.H., Huang, T.L., Chong, M.Y., Wang, L.J., 2022. Stigma, depression, and anxiety among patients with head and neck cancer. Support. Care Cancer 30, 1529–1537. https://doi.org/10.1007/s00520-021-06550-w.
* Tusuubira, S.K., Naggawa, T., Nakamoga, V., 2019. To join or not to join? A case of sickle cell clubs, stigma and discrimination in secondary schools in Butambala District, Uganda. Adolesc. Health Med. Therapeut. 10, 145–152. https://doi.org/10.2147/ahmt.s223956.
van Brakel, W.H., 2006. Measuring health-related stigma – a literature review. Psychol. Health Med. 11, 307–334. https://doi.org/10.1080/13548500600595160.
van Brakel, W.H., Cataldo, J., Grover, S., Kohrt, B.A., Nyblade, L., Stockton, M., Wouters, E., Yang, L.H., 2019. Out of the silos: identifying cross-cutting features of health-related stigma to advance measurement and intervention. BMC Med. 17, 13. https://doi.org/10.1186/s12916-018-1245-x.
van Brakel, W.H., Sihombing, B., Djarir, H., Beise, K., Kusumawardhani, L., Yulihane, R., Kurniasari, I., Kasim, M., Kesumaningsih, K.I., Wilder-Smith, A., 2012. Disability in people affected by leprosy: the role of impairment, activity, social participation, stigma and discrimination. Glob. Health Action 5, 18394. https://doi.org/10.3402/gha.v5i0.18394.
van der Sanden, R.L., Bos, A.E., Stutterheim, S.E., Pryor, J.B., Kok, G., 2015. Stigma by association among family members of people with a mental illness: a qualitative analysis. J. Community Appl. Soc. Psychol. 25, 400–417. https://doi.org/10.1002/casp.2221.
* Verelst, A., de Schryver, M., de Haene, L., Broekaert, E., Derluyn, I., 2014. The mediating role of stigmatization in the mental health of adolescent victims of sexual violence in Eastern Congo. Child Abuse Negl. 38, 1139–1146. https://doi.org/10.1016/j.chiabu.2014.04.003.
* Vlassoff, C., Weiss, M.G., Rao, S., 2013. A question module for assessing community stigma towards HIV in rural India. J. Biosoc. Sci. 45, 359–374. https://doi.org/10.1017/S0021932012000697.
* Vreeman, R.C., Scanlon, M.L., Tu, W., Slaven, J., McAteer, C., Aluoch, J., Ayaya, S., Nyandiko, W.M., 2019. Validation of an HIV/AIDS stigma measure for children living with HIV and their families. J. Int. Assoc. Phys. AIDS Care 18 https://doi.org/10.1177/2325958219880570.
* Wang, J.L., Hsieh, H.F., Assari, S., Gaskin, J., Rost, D.H., 2018. The protective effects of social support and engagement coping strategy on the relationship between perceived discrimination and psychological distress among Chinese migrant children. Youth Soc. 50, 593–614. https://doi.org/10.1177/0044118X15619804.
* Wang, S., Xie, F., 2020. The impact of perceived personal discrimination on problem behavior of left-behind children: a moderated mediating effect model. Child Psychiatr. Hum. Dev. 52, 709–718. https://doi.org/10.1007/s10578-020-01054-w.
* Ward, C., 1985. Sex trait stereotypes in Malaysian children. Sex. Roles 12, 35–45. https://doi.org/10.1007/BF00288035.
Weiss, M.G., Ramakrishna, J., Somma, D., 2006. Health-related stigma: rethinking concepts and interventions. Psychol. Health Med. 11, 277–287. https://doi.org/10.1080/13548500600595053.
Woo, S., Zhou, W., Larson, J.L., 2021. Stigma experiences in people with chronic obstructive pulmonary disease: an integrative review. Int. J. Chronic Obstr. Pulm. Dis. 16, 1647–1659. https://doi.org/10.2147/COPD.S306874.
World Bank, 2020. Country and Lending Groups. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups. (Accessed 23 April 2019).
World Health Organization, 2019. Regional offices. https://www.who.int/about/who-we-are/regional-offices. (Accessed 23 April 2019).
* Xiang, X., Wong, D.F.K., Hou, K., 2018. The impact of perceived discrimination on personality among Chinese migrant children: the moderating role of parental support. Int. J. Soc. Psychiatr. 64, 248–257. https://doi.org/10.1177/0020764018758123.
* Yamaguchi, S., Ling, H., Kim, K., Mino, Y., 2014. Stigmatisation towards people with mental health problems in secondary school students: an international cross-sectional study between three cities in Japan, China and South-Korea. Int. J. Cult. Ment. Health 7, 273–283. https://doi.org/10.1080/17542863.2013.786108.
Yang, L.H., Chen, F.P., Sia, K.J., Lam, J., Lam, K., Ngo, H., Lee, S., Kleinman, A., Good, B., 2014a. What matters most:" a cultural mechanism moderating structural

vulnerability and moral experience of mental illness stigma. Soc. Sci. Med. 103, 84–93. https://doi.org/10.1016/j.socscimed.2013.09.009.

Yang, L.H., Ho-Foster, A.R., Becker, T.D., Misra, S., Rampa, S., Poku, O.B., Entaile, P., Goodman, M., Blank, M.B., 2021. Psychometric validation of a scale to assess culturally-salient aspects of HIV stigma among women living with HIV in Botswana: engaging "what matters most" to resist stigma. AIDS Behav. 25, 459–474. https://doi.org/10.1007/s10461-020-03012-y.

Yang, L.H., Kleinman, A., Link, B.G., Phelan, J.C., Lee, S., Good, B., 2007. Culture and stigma: adding moral experience to stigma theory. Soc. Sci. Med. 64, 1524–1535. https://doi.org/10.1016/j.socscimed.2006.11.013.

Yang, L.H., Thornicroft, G., Alvarado, R., Vega, E., Link, B.G., 2014b. Recent advances in cross-cultural measurement in psychiatric epidemiology: utilizing 'what matters most' to identify culture-specific aspects of stigma. Int. J. Epidemiol. 43, 494–510. https://dxoi.org/10.1093/ije/dyu039.

* Yang, J., Liu, X., Zhao, F., Wang, L., Liu, X., Zhou, H., Shi, B., 2019. The effects of perceived discrimination and city identity on the social adaptation of migrant children in public and private schools. Stress Health 35, 341–349. https://doi.org/10.1002/smi.2869.

* Zhang, A., Cui, L., Iyer, A., Jetten, J., Hao, Z., 2014. When reality bites: hopeful thinking mediates the discrimination-life satisfaction relationship. Anal. Soc. Issues Public Policy 14, 379–393. https://doi.org/10.1111/asap.12034.

* Zhao, J., Li, X., Fang, X., Hong, Y., Zhao, G., Lin, X., Zhang, L., Stanton, B., 2010. Stigma against children affected by AIDS (SACAA): psychometric evaluation of a brief measurement scale. AIDS Behav. 14, 1302–1312. https://doi.org/10.1007/s10461-009-9629-8.