Supplementary Materials

Records identified through database
searches (n = 1154)

Records identified through reference
searches, or expert suggestion (n = 3)

Duplicates removed
 (n = 492)

Records screened based on title and
abstract (n = 665)

Records excluded based on title and
abstract (n = 627), primarily due to lack
of a comparison group, older age group,
or not examining risk or resilience for
homelessness.

Records screened based on full-text
(n = 38)

Records excluded based on full-text (n =
22), primarily due to lack of a
comparison group or examining factors
subsequent to homelessness.

Records included in review
(n = 16)

Figure 1. Flowchart of systematic review of risk and resilience of studies of youth experiencing
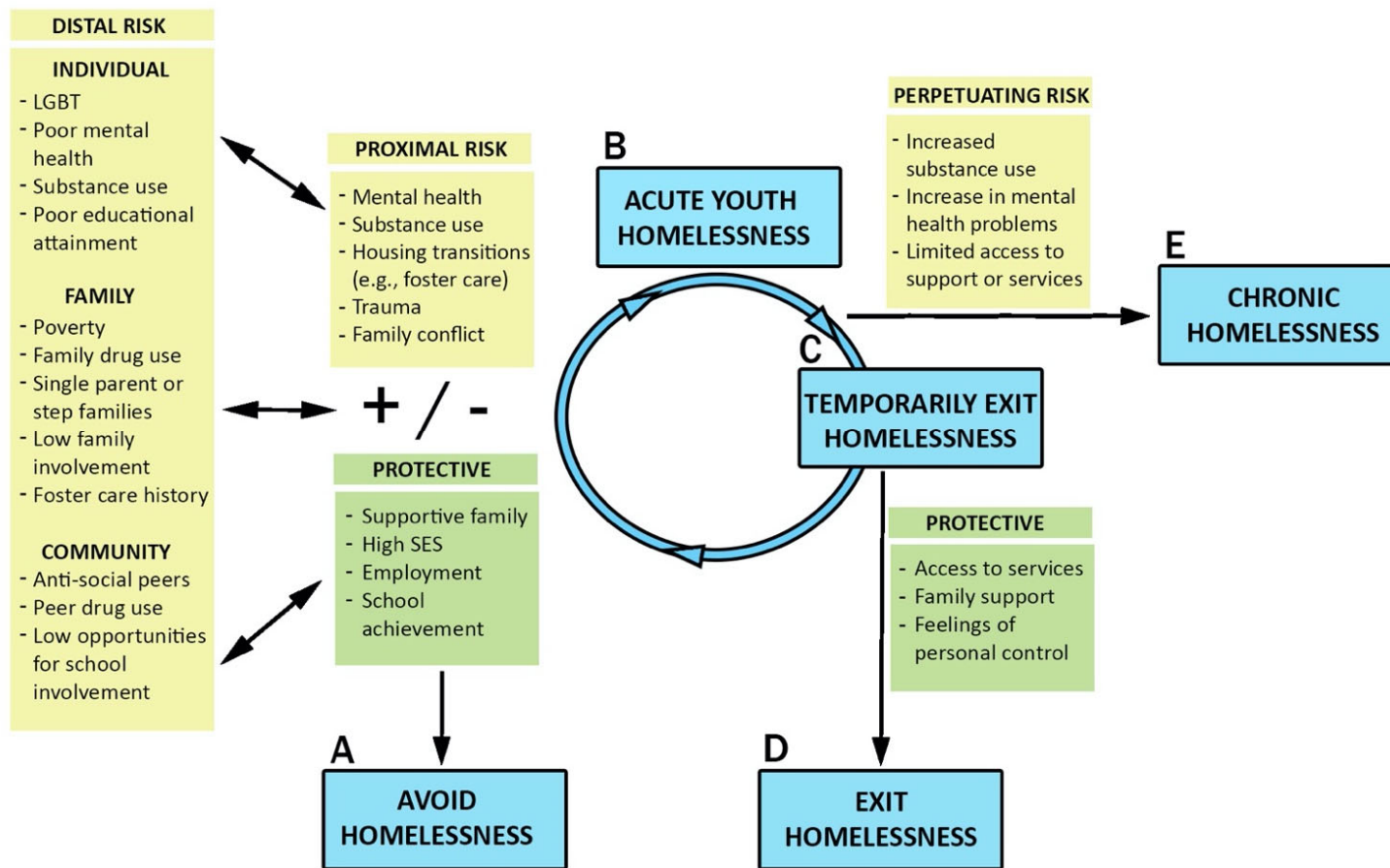
homelessness.

Figure 2. Provisional developmental model of youth homelessness. As described in Tambe and Rice [44] homelessness risk for young people is cyclical. This model summarizes current knowledge of risk (represented in yellow) and protective (represented in green) factors that contribute to A) Avoiding homelessness altogether, B) Developing an initial episode of homelessness, C) Temporarily exiting homelessness, D) Permanently exiting homelessness, and E) Developing chronic homelessness.

Supplementary Material 1: Homelessness Outreach and Monitoring of Environments (HOME)

HOME is a preliminary screening system for risk for homelessness in young people, and is designed to assist services with identifying times of heightened risk of homelessness, and responding to this risk. HOME is also designed to be used in research and we acknowledge that further information on resilience factors as well as family and system level factors will be important in improving this system.

HOME involves flagging young people at higher risk for homelessness (those who report a history of common distal risk factors) for key proximal homelessness risk factors, in order to initiate support for these young people *before* they lose housing or become homeless. This system aims to improve upon common current approaches of enquiring about homelessness, by providing a clear group of risk factors to consider, and indicating some appropriate ways to respond to this risk. This addresses several key factors identified by WHO in a comprehensive public health prevention strategies including identification and monitoring of risk factors, and prevention strategies at the vulnerable group level. It also creates an optimal opportunity for future research providing a clear approach to follow and evaluate. HOME can be used flexibly depending on the service it is being implemented within. A survey is included within this supplement as a suggestion of how services could assess for this information.

It involves:

1. Identifying youth at risk using 7 key factors. Possible tools for assessing these factors are also included. Literature suggests youth with more than one factor are at particular risk [41].
    a. Economic background: Youth who live in low SES neighborhood, or in a family who are under-resourced (ie. Receiving public benefits, on Medi-caid) – Can be measured by asking about benefits, income or parental self-report on validated measures [47]
    b. Trauma: Youth who have a history of trauma, including systemic racial trauma – can be identified using common ACES screening tools [48]
    c. Academic history: Youth with a history of poor achievement, problem behaviors or difficulties at school – can be measured using the Child Behavior Checklist [49]
    d. Housing history: youth who experienced homelessness as a child or ran away from home – Can be measured by self-report or interview using timeline follow-back techniques [50]
    e. Identity: youth identifying as LGBTIQ+, particularly if this has caused tension in their family – can be measured by self-report.
    f. Family environment: Youth from a single parent family, family support or who have been in the foster care system – can be measured by self-report family quality of life [51]
    g. Justice history: youth whose families are involved with the justice system, or who have been involved themselves – can be measured by self-report.

The distal risk factor information can be collected in a variety of ways. We suggest incorporating the information in standard clinical assessment, giving questions as a survey for new service users, or flagging the information on health records. For young people with two or more of these distal factors, HOME suggests providing housing and financial resources upon treatment initiation, as a preventative step, and then ongoing

monitoring for any proximal risk factors.

2. Monitor youth for 5 key environmental changes that increase risk
   a. Family conflict
   b. Drug or substance use: In particular exacerbations in use
   c. Exacerbation of mental illness symptoms
   d. Job: becoming unemployed or at a reduced income (or for family if individual is a child)
   e. Changes in environment: in particular leaving a care environment such as foster care, jail or psychiatric care

Again, environmental changes can be monitored in a variety of ways depending on the resources within the service. Some effective approaches could include clinician monthly monitoring, phone check ins, or quarterly surveys.

3. For youth at risk experiencing these changes, the following are possible intervention responses:

Following identification of youth at high risk for homelessness, HOME suggests close monitoring via intensive case management. Further, HOME suggests the following additional strategies: 1) building a supportive relationship in the clinical setting where the young person feels comfortable sharing the difficulties they are having, 2) Referring the young person to a talk-therapist may help if they do not currently have someone they trust to speak to outside of the family, 3) Understanding what protective factors these youth have – and in a clinical setting building on these where possible. For example, encouraging young people to reach out to their extended family, or other social supports if their family is not a stable option.

Supplementary Table 1 – Summary of risk factors included across studies

	[13] Rosario et al., 2012	[14] Dworsky et al., 2013	[15] Shah et al., 2017	[16] Fowler et al., 2009	[17] Dworsky & Courtney, 2009	(17) Prince et al., 2019	[19] Robert et al., 2005	[20] Embry et al., 2000	[1] Sznajder-Murray et al., 2015	[21] Tyler et al., 2011	[22] Van den Bree et al., 2009	[23] Tyler & Bersani, 2008	[24] Shelton et al., 2009	[2] Morton et al., 2018	[26] Beasley-Smith et al., 2008	[25] Castaños-Cervantes et al., 2018
Demographics	O	+/-[1]	O	O	X	X	O	X	X	+/-[2]	X	-	-	+/-	X	O
LGBTIQ+	-	X	O	O	O	O	O	O	O	O	O	O	O	-	O	O
Racial/Ethnic Minority	O	X	-[3]	-	X	-	O	X	+[4]	X	X	+	-/+	-	O	O
Justice system involvement	O	-	-	O	X	-	O	X	X	O	X	-	X	O	O	O
Education-related protective factors	O	X	+	O	X	O	O	O	+	O	O	O	+	O	+	O
Employment factors	O	O	O	O	X	O	O	O	O	O	O	+	+	O	O	O
Economic difficulty	O	X	O	O	O	X	O	O	-	O	O	O	-	-	O	O
Foster care related risk factors	O	-	-	-	X	X	-	-	O	O	O	O	-	O	O	O
Remained in foster care until age 19	O	O	O	O	O	+	O	O	O	O	O	O	O	O	O	O

[1] Male is a risk factor.
[2] Female is a protective factor.
[3] Only African American was a risk factor in this sample.
[4] Hispanic ethnicity was a protective factor.

School issues	O	X	-	O	O	-	X	X	X	X	-	-/+	X	-	-	O
Trauma	X	-	O	O	X	O	-	-	O	O	-	-	-	O	X	O
Mental health issues	O	-	X	O	X	O	-/X	+/-[5]	O	X	X	O	-	O	X	-
Substance use	-	X	O	O	X	-	X	-	-	O	X	+/-	+/-	O	O	O
Good family relationships	O	X	O	O	+	X	O	O	O	O	+	X	O	O	+	O
Authoritative/harsh parenting	O	O	O	O	O	O	X	O	-	O	O	X	O	O	O	O
Environmental risk	O	O	-	O	O	-	O	O	X	X	O	X	O	O	O	O
Antisocial peers	O	O	O	O	O	O	O	O	O	O	O	X	O	O	-	O
Does not live with relatives	O	O	O	O	-	X	O	O	-	O	O	O	O	O	O	O
Family conflict	O	O	O	O	O	O	-	O	O	-	O	O	X	O	-	O
Family risk factors	O	O	O	O	O	X	O	O	-	X	O	O	-	-	-	O
Family protective factors	O	+	+	O	X	X	O	O	X	x	O	+	O	O	O	O
Adopted	O	O	O	O	O	O	O	O	O	O	O	O	-	O	O	O
Social support	O	X	O	O	X	+	O	O	O	O	O	O	O	O	O	O
Housing instability	O	-	-	O	-	-	O	-	-	-	O	O	-	O	O	O
Never ran away while in foster care	O	O	O	O	X	O	O	O	O	O	O	O	O	O	O	O

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[5] Thought disorder diagnosis was a protective factor.

Individual protective characteristics	O	O	O	O	O	O	O	O	O	O	O	O	O	O	X	+
Developmental risk factors	-	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

Supplementary table 1: Summary of risk factors included across studies. The table summarizes all risk factors examined across each study included in this review, and whether each factor was a significant risk (-) or resilience (+) factor, whether it was examined but not found to be significant in a particular study (X), or if it was not included in the study at all (O). Since there were many specific factors examined, factors were grouped into categories, with details of each category included in Supplementary Table 2.

Supplementary Table 2: Sub-groupings for each risk and resilience factor

Demographics
Age, Older age at baseline study
Military
Rural vs Urban
Sex

LGBT

Racial/Ethnic Minority

Justice system involvement
Incarceration
Delinquency/legal problems
Juvenile rehab service/court
Ever had juvenile justice
involvement
Perpetration of violent acts
Criminal behavior, Perpetrator
of violence, Member of a named
gang, Arrested or taken into
custody by police, Convicted or
pleaded guilty in juvenile court,
Convicted or pleaded guilty in
an adult court

Education related protective factors
High GPA
Grade when respondent left
school
Left foster care with HS or GED
Ever received school services
Opportunity for school
involvement
Completing some college

Employment Factors
Employed
Ever had a job
Higher SES

Economic difficulty
Economic difficulty in the past
12 months
Currently receiving welfare
benefits
Duration of welfare assistance
before age 18
Low income
Parent's work limitation due to
poor health
Unemployed
Number of financial services

Foster Care related risk factors
Number of housing services
received
Re-entered foster care after
being returned home
More placement transitions
while in foster care
Younger at exit from foster care
Less likely transition out of
foster care after independent
living placements
Less likely to have left foster
care after restrictive placements
Prior foster care episode
Prior placement in substitute
environment outside the house

Remained in foster care at age 19

School issues
School issues
Less than High school Ed
Learning disability
Early problem behavior/history
of behavior issues/child
behavior problem
School adjustment problems,
school dissociation
Dropping out of school
School suspension
School fight
Expelled from school
Low school commitment

Trauma
Trauma
Physical abuse; high level of
parental violence (abuse)
Sexual abuse
Neglect
Neighborhood victimization
Victimization/peer
victimization/ victim of violence

Mental health issues
Mental Health Issues
History of Psych
Hospitalizations
Negative emotions

Low self-esteem
Dysfunctional ER strategies
Gambling

Suicidal ideation
Prescribed antidepressants (past
12 months)
Behavioral disorders
Somatic symptoms, Depressive
symptoms
Depressive symptomatology

Externalizing behavior scores in
the clinical range

Substance use
Substance use
Early alcohol onset
Substance abuse referral
Binge drinking and substance
use

Good family relationships
Family involvement
Close to parent or grandparent
(foster youth)
Family relationship quality
Close to out of home caregiver
Temporary home visit (foster
youth)
Warmth and support from
parents
Rewards for family involvement
Very close to at least one adult
family member

Authoritative/Harsh parenting
Parenting-harsh punishment/
excessive discipline and
punishment
Authoritative father
Authoritative mother

Environmental risk
Youth is a parent
Prior medical injury
Environmental risk
Government spending on
housing supports
Percentage of housing burdened
renters

Antisocial peers
Deviant peers

Does not live with relatives
Does not live with bio family/
Placed in nonrelative foster
home

Placed in a group care setting

Family conflict
Pathogenic family dynamic
Social services investigation of fam.
Family conflict/instability
Poor youth/parent relationship

Family risk factors
Bio Father incarcerated
Youth's parent was teen mom
Unmarried/single parent or re-partnered family
Poor family management
Parental attitudes favorable to drug use
Family drug use/caregiver substance abuse

Family protective factors
Mother's education
Parent's general health
Family structure (living with mom and dad)
Monitoring style parenting
Placed in relative foster home
Opportunities for family involvement

Adopted

Social support
Connection to an adult
Number of wellbeing services

Developmental risk factors
Age of first sexual activity
Age of puberty

Housing instability
Prior Homelessness
History of ever running away
Ran away while in foster care more than once
Ordered out of home by parents

Never ran away while in foster care

Individual protective characteristics
Assertiveness
Subjective Well-being
Positive emotion

Supplementary Table 3: Risk of bias assessments

Article	Selection Bias Homelessness measured using validated measures or self-report and groups treated the same = low bias Homelessness assumed by reviewer or unstructured clinical interview and/or groups selected differently = high bias	Detection Bias Were appropriate confounds eg gender, age, SES, income etc considered? = low bias Little to no consideration of confounds = high bias
Prince et al 2019	Low	Low
Castaños-Cervantes et al., 2018	Low	High
Morton et al., 2018	Low	Low
Rosario et al., 2012	Low	Low
Shah et al., 2017	High	Low
Sznajder-Murray et al., 2015	Low	Low
Dworsky et al., 2013	Low	Low
Embry et al., 2000	Low	Low
Tyler et al., 2011	Low	Low
Van den Bree et al., 2009	Low	Low
Bearsley-Smith et al., 2008	High	Low
Robert et al., 2005	High	Low
Tyler & Bersani, 2008	Low	Low
Shelton et al., 2009	Low	Low
Fowler et al., 2009	Low	Low
Dworsky & Courtney, 2009	Low	Low