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Commissioned Reports

Social Determinants of Health: A Synthesis of Review of Evidence

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RRASP Réseau de recherche sur l'amélioration de la santé des populations
PHIRN Population Health Improvement Research Network
RESEAU DE RECHERCHE APPLIQUEE SUR LA SANTE DES FRANCOPHONES DE L'ONTARIO
RORRHS Réseau ontarien de recherche sur les ressources humaines en santé
OHHRRN Ontario Health Human Resources Research Network

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EXECUTIVE SUMMARY

The growing incidence of chronic diseases has, in part, contributed to increased political and societal pressures to ensure public funds are allocated to the provision of services with known effectiveness. In other words, there is a call to action to ensure the programs and services implemented across Canada in population and public health are effective, and that they will result in improved health outcomes for Canadians. There is some evidence to suggest that current practices related to the social determinants of health may not adequately address inequities in health, and may even increase disparities. The purpose of this paper is to identify and summarize research findings on the effectiveness of population based interventions on the social determinants of health, which was identified as a priority topic area in the annual report of the Ontario Chief Medical Officer of Health to the legislative assembly.

The health-evidence.ca registry was searched for reviews on the social determinants of health in May 2011. A standardized quality assessment tool was used to assess the methodological quality of each identified review by two independent reviewers. All search results were limited to reviews rated as being of strong methodological quality. Extracted data included age of participants studied in the review, research design, methodological quality rating, details of the interventions evaluated, details describing which outcomes where evaluated as well as how they were measured, and outcome data.

The social determinants of health search identified 31 high quality reviews, 17 of which reported on outcomes relevant to this review. Outcomes reported on most frequently included: health care utilization (N=10), mental health (N=9), physical health (N=6), and behavioural problems (N=6). The participants studied ranged from the general population with low literacy to adults with mental disorders and homeless persons, as well as children, adults, and health professionals. The interventions evaluated can be classified into the following categories: improving health, supportive housing, home visiting/social support programs, improving literacy, after-school programs, gang/violence prevention, monetary incentives, reducing disparities, and the prevention of sexually transmitted infections.

Nursing home visits in the prenatal period were associated with increased awareness of available community services, greater attendance at childbirth education classes, and speaking more frequently with service providers. Furthermore, social support interventions for at-risk pregnant women resulted in significantly fewer hospital admissions during pregnancy.

In contrast, health interventions among those with low literacy had no impact on health-related outcomes and mammography screening rates in the long term, even though positive effects for screening were observed at six months. Assertive community treatment was effective in reducing homelessness and hospitalization outcomes. Results from one study illustrate that case management and subsidized housing combined were associated with reduced inpatient and outpatient health care utilization. However, no impact was observed for substance use, psychiatric symptoms, or outpatient mental health care utilization. Finally, strategies to prevent HIV and other sexually transmitted infections among female sex workers in resource-poor settings were effective in increasing use of preventive services.

The evidence on the impact of interventions targeting the social determinants of heath on mental health outcomes is mixed. For example, some evidence suggests that among homeless persons with severe mental illness, assertive community treatment is associated with a statistically significant reduction in homelessness and improved psychiatric symptom severity. Additional evidence also indicates that intensive case management with access to drop-in centre services, temporary housing, and rehabilitation services is effective in improving psychiatric symptoms and perceived quality of life in comparison to usual care. Amongst those with substance use disorder, case management versus standard care was not found to have a statistically significant effect on reported psychiatric symptoms. However among those with intellectual disability and concurrent physical, mental or behavioural problems, and in homeless populations with concurrent mental illness and substance use disorders, assertive community treatment was not associated with improved psychological and psychiatric function or reduced substance use, compared to standard community treatment. Those receiving housing support were found to spend less time hospitalized, and reported a greater number of days housed, but did not experience fewer psychiatric symptoms or reduced substance use.

With respect to behavioural problems the evidence indicates that health care services for populations with intellectual disabilities were not effective in improving behavioural issues such as adaptive behaviours. Similarly the provision of financial resources to families with low SES did not lead to significant improvements in problem behaviour among children, and delinquent behaviour among adolescents.

Evidence illustrates that a universal school-based program to prevent violent and aggressive behaviour resulted in a 15% reduction in violent behaviour school wide, with the greatest impact observed in pre-kindergarten, kindergarten, and high school students. Intervention components included the provision of educational materials; cognitive therapy; social skills training; environmental changes to the whole school as well as the classroom; peer mediation and behaviour modification. Specific topics covered in the intervention included: general violence; disruptive or anti-social behaviour; bullying; gang activity; and dating violence. The greatest impact was observed when the intervention was implemented by peers/students. The intervention was equally effective in schools located in low SES, high-crime environments as in all environments.

Among teenage mothers with low SES, a postnatal home visiting intervention resulted in statistically significant greater weight and height gain in infants, as well as better Denver development scores at four months, compared to infants of mothers receiving standard care. Among very low-weight infants, telephone support and home visiting in combination resulted in statistically significantly fewer re-hospitalizations, acute care visits, lower incidence of failure to thrive, less child abuse, and less foster placement. Among high risk mothers with low SES receiving pre- and post-natal home visits, reductions in bladder infections and number of cigarettes smoked daily, as well as improved nutrition, were observed. Provision of financial resources to families with low SES generally did not result in decreased rates of child

maltreatment, physical/emotional/sexual abuse, visits to the emergency department, and injuries reported in the previous year.

This review of the literature represents many systematic reviews and meta-analyses, primary studies and thousands of people. To some extent, the results illustrate that many population health and public health programs are associated with benefits to various populations, particularly related to outcomes such as healthy eating, physical activity, mental health symptoms, more stable housing, and, in some populations, substance use. However, there remains cause for concern given some of the evidence suggests that various interventions may in fact widen health disparities. As a result, higher SES and white populations benefit more from certain interventions than those from low SES and non-white populations. Much more research is needed to fully explore if and how interventions impact heath outcomes in different sub populations. However, the evidence presented here provides some direction for moving forward with practice, draws attention to some areas that require ongoing evaluation, and identifies some practices that may not be producing the expected impact and therefore should be examined critically in terms of future investment. While a great deal has been accomplished in population and public health programs there is still much work to be done!

BACKGROUND

Social Determinants of Health

Social determinants of health includes a wide range of factors, such as social class, income, to education and literacy, to race and ethnicity, and housing quality [1]. Social relationships are also factors considered part of social determinants of health and can have an influence on health, such as chronic illness in later life being the product of adverse early social exposures [1]. As the boundaries of social determinants expand, it is important to synthesize what is known and how the health of individuals could be improved.

Evidence-Informed Decision Making

Evidence-informed decision making (EIDM) is accepted in Canada as necessary for the provision of effective health care services. The goal of the public health sector in Canada is to promote health and reduce the amount of disease, premature death, and pain and suffering in the population, through health promotion, disease and injury prevention, and health protection [2]. The effectiveness of public health services has direct implications for health system outcomes and expenditures, as the following example illustrates. In 2005, chronic diseases, such as cardiovascular disease (CVD), cancer, emphysema, and diabetes, accounted for 35 million deaths worldwide [3]; had been increasing steadily over the past two decades; and in 2002, the economic burden of CVD and cancer alone in Canada was $32.7 billion [4]. Overweight and physical inactivity, recognized risk factors for chronic diseases [5,6], have also risen steadily in the past two decades. Canadian data suggests a 10% decrease in sedentary behaviour would result in health savings of $150 million per year [7].

The growing incidence of chronic diseases has, in part, contributed to increased political and societal pressures to ensure public funds are allocated to the provision of services with known effectiveness. In other words, there is a call to action to ensure the programs and services implemented across the public health sector in Canada are effective, and that they will result in improved health outcomes for Canadians. The purpose of this commissioned work is to identify and summarize research findings on the effectiveness of population based interventions in three priority topic areas identified in the annual report of the Ontario Chief Medical Officer of Health to the legislative assembly related to: 1) community-based diet and nutrition; 2) built environment; and 3) social determinants of health.

METHODS

The www.health-evidence.ca online registry is a free, searchable database of quality-appraised systematic reviews evaluating the effectiveness of public health interventions. The health-evidence.ca registry is populated through an extensive ongoing search (1985-present) of seven electronic databases (MEDLINE, EMBASE, CINAHL, PsycINFO, Sociological Abstracts, BIOSIS, SportDiscus), hand searching of 46 journals, and screening the reference lists of all relevant reviews [8]. Reviews are assessed for relevance, and then relevant reviews are indexed by commonly-used public health terms and quality assessed by two independent reviewers who come to agreement on the final rating of each review (strong, moderate, weak). More detail on www.health-evidence.ca has previously been published [8].

The health-evidence.ca registry was used to search for reviews on the social determinants of health in May 2011. To search for the social determinants of health reviews, the *Social Determinants of Health Focus of Review* was searched. All search results were limited to reviews rated as being of strong methodological quality.

Two reviewers used a standardized quality assessment tool to assess the methodological quality of each identified review. Using a ten-point quality assessment tool (available at: http://www.health-evidence.ca/downloads/QA%20tool_Doc%204.pdf), all reviews were assessed by two reviewers independently and disagreements resolved through discussion. The ten criteria used to assess methodological quality were: (1) a clearly focused question; (2) inclusion criteria explicitly stated; (3) comprehensive search strategy; (4) adequate number of years covered in the search; (5) description of level of evidence; (6) assessment of the methodological rigor of primary studies; (7) methodological quality of primary studies assessed by two reviewers and results given; (8) tests of homogeneity or assessment of similarity of results conducted and reported; (9) appropriate weighting of primary studies; and (10) author's interpretation of results supported by the data. Each criterion, worth one point each, was given equal weight in the overall assessment score. Reviews were given an overall score out of 10 and were classified into three categories: Strong, Moderate, and Weak. Reviews receiving an overall rating of eight or more were considered strong, those with a score of five to seven, moderate, and those with four or less, weak. Quality ratings for reviews included in this synthesis project ranged from 8-10.

All outcome data was extracted from all the reviews included in this project and organized into a matrix table. Additional tables were then created according to the most prominent outcomes to further summarize and present the data for each of the topic areas. Data extraction was conducted on strong reviews using a previously developed tool. Extracted data included author and year of publication, methodological quality rating, author's country, number of included studies, research design, population examined, interventions evaluated, details describing which outcomes where evaluated, the effectiveness of the intervention, the results, and additional comments. The data are presented in Tables 1 to 3.

RESULTS

The social determinants of health search identified 31 high quality reviews, 17 of which reported on outcomes relevant to this synthesis, where 13 were systematic reviews and four meta-analyses. Outcomes reported on most frequently included: health care utilization (N=10), mental health (N=9), physical health (N=6), and behavioural problems (N=6). Among the 17 reviews the population studied varied greatly. Three of the 17 reviews included RCTs only, two reviews included RCTs and quasi-experimental studies, 6 included both RCTs and other types of studies (non-RCTs, quasi-RCTs, quasi experimental, controlled before-and-after studies, cross-over studies, controlled trials, cohort studies), one review included prospective cohort and interrupted times series, three reviews did not clearly identify the types of studies included, and two reviews found no studies meeting the inclusion criteria. Five of the reviews scored 10 out of a possible 10 points on methodological quality, six reviews scored nine, and six scored eight. The majority of the reviews were conducted in the UK (N=7), followed by Canada and the United States (N=5), and Denmark (N=1). The number of primary studies included in the reviews ranged from no studies to 68 and the participants studied ranged from the general population with low literacy to adults with mental disorders and homeless persons, as well as children, adults, and health professionals. The interventions evaluated varied significantly across the reviews but can be classified into the following categories: improving health, supportive housing, home visiting/social support programs, improving literacy, after-school programs, gang/violence prevention, monetary incentives, reducing disparities, and prevention of STIs.

HEALTH CARE UTILIZATION

A total of eight reviews contributed data to the synthesis of evidence on the impact of interventions addressing social determinants of health on health care utilization. Interventions evaluated included: nursing home visits during the pre and postnatal period; health education, and assertive community treatment. Populations studied included pregnant women with low SES, adults with low literacy/numeracy levels, and homeless persons with severe mental illness.

Nursing home visits in the prenatal period were associated with increased awareness of available community services, greater attendance at childbirth education classes, and speaking more frequently with service providers. Furthermore, social support interventions for at-risk pregnant women resulted in significantly fewer hospital admissions during pregnancy. The evidence illustrated that health interventions among those with low literacy had no impact on health-related outcomes and mammography screening rates in the long term, even though positive effects for screening were observed at six months.

Assertive community treatment was effective in reducing homelessness however two studies reported a statistically significant positive effect on hospitalization outcomes following assertive community treatment when compared to standard case management. There is very limited evidence on the impact of an intervention consisting of case management and subsidized housing among homeless populations with substance abuse issues. Results from one study (retrospective case study) illustrated that case management and subsidized housing combined were associated with reduced inpatient and outpatient health care utilization. However, no impact was observed for substance use, psychiatric symptoms, or outpatient mental health care

utilization. Given the very small number of studies, these findings must be interpreted and used cautiously and priority should be given to the generation of evidence from rigorous studies in this area. Finally, strategies to prevention HIV and other sexually transmitted infections among female sex workers in resource-poor settings was effective for increasing condom use, decreasing STIs, and increasing use of preventive services.

MENTAL HEALTH

The effectiveness of interventions addressing the social determinants of health on mental health outcomes was evaluated in eight reviews. Interventions studied included: assertive community treatment; housing with case management, residential treatment, early intervention for postnatal depression including social support, and outreach. Populations studied included: persons with an intellectual disability and concurrent physical, mental or behavioural problems, teenage mothers with low socioeconomic status; homeless persons with severe mental illness with and without concurrent substance use issues, and unemployed persons and/or those perceived to be in unstable employment.

Generally, the evidence is mixed. For example, in one review, among homeless persons with severe mental illness, assertive community treatment is associated with a statistically significant reduction in homelessness (37%, 95% CI 18-55%), and improved psychiatric symptom severity (26%, 95%CI 7-44%). Additional evidence also indicates that intensive case management with access to drop-in centre services, temporary housing, and rehabilitation services was effective in improving psychiatric symptoms and perceived quality of life in compared to usual care. One study also reported a positive association between the number of contacts the client had with a treatment program and improvements in psychiatric symptoms and reduced alcohol and drug use. There is also limited evidence that suggests a program that supports greater integration and coordination among agencies serving homeless individuals, who are receiving assertive community treatment, is associated with improved mental health outcomes. However, improvements in individual level health outcomes were not observed.

Among those with substance use disorders, case management versus standard care was not found to have a statistically significant effect on reported psychiatric symptoms. Furthermore, no studies compared the impact of case management to other treatments for those with substance use disorders.

Individuals with intellectual disability and concurrent physical, mental, or behavioural problems, as well as homeless people with concurrent mental illness and substance use disorder, assertive community treatment was not associated with improved psychological and psychiatric function, or reduced substance use, compared to standard community treatment. Therapeutic communities versus usual care were associated with slightly reduced depression scores and higher abstinence rates, but not other psychiatric symptoms. Furthermore, those receiving housing support were found to spend less time hospitalized, and reported a greater number of days housed, but did not experience fewer psychiatric symptoms or reduced substance use.

Among teenage mothers with low socioeconomic status, there is a small amount of evidence that early interventions with nurse home visits was associated with better mental health

outcomes for infants. As well, mothers who received counselling recovered from postnatal depression more often than teenage mothers who did not receive counselling.

In the work setting interventions involving task restructuring and teamwork have been evaluated. Task restructuring interventions seek to increase the skills utilized by workers by increasing the variety of work tasks which are required as part of their jobs. While a significant decrease in job pressure was reported in one study, there is little evidence to suggest that task variety significantly improves psychosocial outcomes in the work setting. Similar results were reported for team working (creating more autonomous working groups which involved giving workers more collective responsibility and decision making power). The evidence generally does not suggest that these interventions significantly improve mental health outcomes for a variety of workers at different levels of decision making autonomy in organizations, particularly in the long term (> 6 months). The evidence also illustrates that those unemployed or in insecure employment experience higher stress levels, and that stress and doctor visits amongst workers were significantly increased following privatization.

BEHAVIOURAL PROBLEMS

The effectiveness of interventions addressing the social determinants of health on outcomes related to behavioural problems was evaluated in six reviews. Interventions studied included: case management, after school programs, cognitive behavioural treatment (CBT), anti drinking and driving programs, judicial supervision, school-based anti-violence and aggression programs, and provision of additional money to families of low SES. Populations studied included: persons with an intellectual disability and concurrent physical, mental or behavioural problems, children and adolescents, populations with antisocial personality disorder, drinking drivers, known drug offenders, and low SES families.

Generally the evidence indicated that health care services for populations with intellectual disabilities were not effective in improving behavioural issues such as adaptive behaviours. The evidence of the provision of financial resources to families with low SES did not illustrate statistically significant improvements in problem behaviour among children, and delinquent behaviour among adolescents.

Among children and adolescents attending an after school program, which involved the SAFE (sequenced, active, focused and explicit) approach, a statistically significant improvement in behavioural problems was observed compared to other programs ($p<0.05$). Other evidence illustrated that a universal school-based program to prevent violent and aggressive behaviour resulted in a 15% reduction in violent behaviour school wide, with the greatest impact observed in pre-kindergarten and kindergarten (32.4% reduction), and high school (29.2% reduction). Intervention components included the provision of educational materials; cognitive therapy; social skills training; environmental changes to the whole school as well as the classroom; peer mediation; and behaviour modification. Specific topics covered in the intervention included: general violence; disruptive or anti-social behaviour; bullying; gang activity; and dating violence. The greatest impact was observed when the intervention was implemented by peers/students (41.6% reduction in violent behaviour). Furthermore, the intervention was equally effective in schools located in environments with high crime rates and low SES (29.2% reduction in violence) compared to all environments. There was some indication that the intervention had

the greatest impact among schools where more than 50% of students were white (20.4% reduction in violence), although an impact was also observed in schools where more than 50% of students were black (16.8% reduction in violence).

Furthermore, among those with antisocial personality disorder, CBT did not result in improvements in verbal aggression (odds ratio 1.25, 95% CI, 0.40 to 3.94), or physical aggression (odds ratio 0.92, 95% CI, 0.28 to 3. 07) immediately post intervention or at 12 months post intervention. An intervention for imprisoned drinking-driving offenders that utilized motivational interviewing principles, along with incarceration, did not result in statistically significant reductions in reconvictions at 24 months. However, there was a trend toward a positive effect.

PHYSICAL HEALTH

The effectiveness of interventions addressing the social determinants of health on outcomes related to physical health was evaluated in five reviews. Interventions studied included: assertive community treatment; housing with case management, residential treatment, early intervention for postnatal depression including social support, and outreach. Populations studied included: persons with an intellectual disability and concurrent physical, mental or behavioural problems, teenage mothers with low socioeconomic status; homeless persons with severe mental illness with and without concurrent substance use issues, and unemployed persons and/or those perceived to be in unstable employment.

Among teenage mothers with low SES, a post natal home visiting intervention resulted in statistically significant greater weight and height gain for infants, as well as better Denver development scores at four months, compared to infants of mothers receiving standard care. Among very low weight infants, telephone support and home visiting in combination resulted in statistically significant fewer re-hospitalizations, number of acute care visits, incidence of failure to thrive, child abuse and foster placement. Among high risk mothers with low SES, receiving pre- and post-natal home visits, studies found reductions in bladder infections and the number of cigarettes smoked daily, as well as improved nutrition. The provision of financial resources to families with low SES generally did not result in decreased rates of child maltreatment, physical/emotional/sexual abuse, visits to the emergency department and injuries reported in the previous year.

Interventions focused on improving health among those with limited literacy generally were not effective in improving physical health outcomes. However, among diabetics, haemoglobin A1C levels were reduced to a greater extent for individuals with the lowest literacy levels compared to those with higher literacy. For individuals with substance use disorders, case management was not more effective than other treatments in improving physical health, although a trend toward a positive effect was observed. Among homeless populations with tuberculosis, cash incentives and vouchers resulted in increased adherence to initial assessments following a positive tuberculin skin test, as well as preventive therapy completion rates.

CONCLUSIONS

This review of the literature represents many systematic reviews and meta-analyses, primary studies and thousands of people. To some extent the results illustrate that many population health and public health programs are associated with benefit to various populations, particularly related to outcomes such as mental health symptoms, more stable housing, and in some populations substance use. However, there remains cause for concern given some of the evidence suggests that various interventions may in fact widen health disparities as a result of higher SES and white populations benefiting more from certain interventions than those from low SES and non-white populations. Much more research is needed to fully explore if and how interventions impact heath outcomes in different sub populations. However, the evidence presented here provides some direction for moving forward with practice, draws attention to some areas that require ongoing evaluation, and identifies some practices that may not be producing the expected impact and therefore should be examined critically in terms of future investment. While a great deal has been accomplished in population and public health programs there is still much work to be done!

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TABLES

TABLE 1: QUALITY ASSESSMENT OF INCLUDED SOCIAL DETERMINANTS OF HEALTH REVIEWS (N=17)

Study Details		Quality Assessment Criteria* ('x' indicates criteria met)											
Author	**Year**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total /10**	**Rating**
Balogh	2008	x	x	x	x	x	x	x	x	x	x	10	Strong
Chilvers	2006	x	x	x	x	x	x		x	x	x	9	Strong
Ciliska	1994	x	x	x	x	x	x		x	x	x	9	Strong
Ciliska	1996	x	x	x	x	x	x	x			x	8	Strong
Clement	2009	x	x	x	x	x	x	x	x	x	x	10	Strong
Coldwell	2007	x	x	x	x	x	x		x	x	x	9	Strong
Durlak	2010	x	x	x	x	x			x	x	x	8	Strong
Egan	2007	x	x	x	x	x	x		x		x	8	Strong
Fisher	2008	x	x	x	x	x	x		x	x	x	9	Strong
Gibbon	2010	x	x	x	x	x	x	x	x	x	x	10	Strong
Hahn	2007	x	x	x	x		x	x	x		x	8	Strong
Hesse	2007	x	x	x	x	x	x		x	x	x	9	Strong
Hodnett	2010	x	x	x	x	x	x	x	x	x	x	10	Strong
Hwang	2005	x	x		x	x	x	x	x	x		8	Strong
Lucas	2008	x	x	x	x	x	x	x	x	x	x	10	Strong
Pignone	2005	x	x	x	x	x	x	x	x		x	9	Strong
Shahmanesh	2008	x	x	x	x	x			x	x	x	8	Strong

*Criteria for quality assessment: (1) clearly focused question; (2) appropriate inclusion criteria to select primary studies; (3) comprehensive search strategy described; (4) search strategy covered adequate number of years; (5) description of level of evidence; (6) assessment of methodological quality; (7) results transparent (two independent reviewers quality assessed); (8) appropriate to combine/compare studies; (9) appropriate methods for combining results; (10) author's interpretations supported by the data.

TABLE 2: CHARACTERISTICS OF SOCIAL DETERMINANTS OF HEALTH REVIEWS

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
Balogh (2008)	CA	SR	8 (6 RCTs, 1 ITS, 1 CBA)	Persons with an intellectual disability and concurrent physical, mental, or behavioural problems (16 years and older)	Components of health care services that can be targeted to improve outcomes in disease management	Measures of physical health, psychological health, behavioural problems, carer burden, quality of life, and health system issues
Beach (2006)	US	SR	27 (20 RCTs. 7 CCTs)	Physicians (majority), nurses, medical assistants, emergency medical personnel in outpatient setting	Provider-targeted, patient-targeted, and multi-faceted interventions. Primary intervention was a tracking system in which clinician is given an automated reminder that a particular service might be due)	Health care process (e.g. use of services), patient health status, patient rating of care
Chilvers (2006)	UK	MA	0	Adults with severe mental disorder(s)	Supported housing schemes, outreach support schemes, standard care	Service utilization, medical/mental state changes, satisfaction, social functioning, quality of life, economic outcomes
Ciliska (1994)	CA	SR	9 strong studies*	Clients in pre- and postnatal periods	Public health nursing interventions carried out by the strategy of home visiting	Program process, client satisfaction, client goal, knowledge/attitudes, health risk behaviours, health care utilization, mental health/development, physical

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
						health/development, social health/development, economic outcomes, quality of care professional, quality of family care, quality of life
Ciliska (1996)	CA	SR	9 strong studies*	Clients in pre- and postnatal periods	Public health nursing interventions carried out by the strategy of home visiting	Program process, client satisfaction, client goal, knowledge/attitudes, health risk behaviours, health care utilization, mental health/development, physical health/development, social health/development, economic outcomes, quality of care professional, quality of family care, quality of life
Clement (2009)	UK	SR	15 (11 RCTs, 4 quasi-randomized trials)	Adults (including adults consenting on behalf of dependants, and professionals who may be the target of an intervention, all participants on whom outcomes are reported must be adult)	Complex intervention (more than one element) AND intended to improve outcomes for people with limited literacy/numeracy, evidenced by either: -mention of literacy or numeracy in the description of the population or -mention of literacy or numeracy in the description of the intervention	-Clinical outcomes (physical or psychological) -Health knowledge -Health behaviors -Self-reported health status/quality of life -Self-efficacy/confidence in relation to health/health behavior -Utilization of health care -Health professional behavior
Coldwell (2007)	US	MA	10 (6 RCTs, 4 observational	Homeless persons with	Assertive community treatment	Reduction in homelessness, hospitalization, and symptom

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
			studies)	severe mental illness		severity outcomes
Durlak (2010)	US	MA	68 (24 randomized trials, 44 quasi experimental)	Youth between the ages of 5 and 18 involved in an after-school program	After-school programs	Feelings and attitudes (child's self-perception and bonding to school); behavioural adjustment (positive social behaviours, problem behaviours, and drug use); school performance (achievement test scores, grades, and school attendance)
Egan (2007)	UK	SR	11 (3 prospective cohorts, 8 ITS)	General population whose health could be affected by privatization (e.g. employees, customers, general public)	Privatization of public sector industries and utilities (e.g. common carrier transportation, communication services, energy, water, sanitation, etc.)	Any health outcome measure of physical health, mental health, and injuries or absenteeism (e.g. physical or self-reported measures, or routinely collected data)
Fisher (2008)	UK	SR	0	Children and young people aged 7-16 who were not involved in a gang	Opportunities provision gang prevention programmes, opportunities provision (> 50% of total programming) + other interventions	Primary: Gang membership status, gang-related delinquent behaviour and criminal offenses
Gibbon (2010)	UK	MA	11 (10 parallel trials, 1 cluster-randomized trial)	Men or women 18 years or over with a diagnosis of antisocial personality disorder defined	1. behaviour therapy; 2. cognitive analytic therapy; 3. cognitive behavioural therapy; 4. dialectical behaviour therapy;	Primary: Reduction in aggressive behaviour or aggressive feelings, reconviction, global state/functioning, social functioning, adverse events

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
				by any operational criteria such as DSMIV, or dissocial personality disorder as defined by operational criteria such as ICD-10.	5. group psychotherapy; 6. mentalization-based therapy; 7. nidotherapy; 8. psychodynamic psychotherapy; 9. schema focused therapy; 10. social problem-solving therapy; 11. therapeutic community treatment	Secondary: QOL, engagement of services, satisfaction with treatment, leaving the study early, substance misuse, employment status, housing/accommodation status, economic outcomes, impulsivity, anger
Hahn (2007)	US	SR	53*	Kindergarten, elementary, middle, and high school students	Universal school-based programs to reduce or prevent violent and aggressive behaviour in children and adolescents	Violent outcomes, proxies for violent outcomes (measures of conduct disorder, measures of externalizing behaviour, measures of acting out, measures of delinquency, school records of suspension and disciplinary referrals)
Hesse (2007)	DK	MA	15 RCTs	Persons with substance use disorders, and other mental disorders	Any model of case management (brokerage model, generalist/intensive case management, assertive community treatment, clinical case management, or strengths-based case management)	Primary: Drug use, alcohol use, employment and income, physical health, legal status, family/social relations, mental health, living situation. Secondary: Treatment participation and retention, service utilization (not including case management services), rehospitalisation, satisfaction with intervention

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
						received
Hodnett (2010)	CA	MA	17 RCTs	Pregnant women judged to be at risk of having pre-term or growth-restricted babies, or both	Standardized or individualized programs of additional social support, provided in either home visits, during regular antenatal clinic visits, and or by telephone on several occasions during pregnancy	Primary outcomes: Mother 1. Caesarean birth Baby 1. Gestational age less than 37 weeks at birth 2. Birth weight less than 2500 gm 3. Stillbirth/neonatal death Secondary outcomes: Mother 1. Antenatal hospital admission 2. Postnatal re-hospitalization (for mother) 3. Postnatal depression 4. Less than highly satisfied with antenatal care Baby 1. Long-term morbidity (as defined by trial authors)
Hwang (2005)	CA	SR	13 good quality and 32 fair quality studies (RCTs, prospective longitudinal studies, retrospective	Homeless persons	Interventions to improve health of homeless people, broadly defined to include both services that a primary care provider could provide, and programs to which homeless people could be referred	Health-related outcomes defined as measures of physical health, mental health (including psychiatric symptoms and psychological or cognitive function), substance use (alcohol, drugs, or tobacco), HIV risk behaviours, healthcare

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
			studies)			utilization, adherence to health care, and QOL.
Lucas (2008)	UK	MA	9 RCTs	Families with at least one child under 18, or in which a woman is pregnant, living in a high income country being from groups socially or economically disadvantaged within their country.	Direct cash payments, positive taxation schemes (such as Negative Income Tax) which benefit low income families	Primary: Any measure of physical child health; mental health, or emotional state; oral health Secondary: Any standardized measure of children's psychomotor or cognitive development; Any standardized measure of educational progress or attainment; Numbers of pregnancies, births or sexually transmitted infections among under 16s in target families Any adverse effects reported for any member of the family were recorded.
Pignone (2005)	US	SR	20 (9 RCTs, 8 non-RCTs, 3 uncontrolled trials)	General population with low literacy	Interventions to reduce disparities in health outcomes on the basis of race, ethnicity, culture, or age.	1. Health knowledge; 2. Health behaviors, such as smoking or dietary patterns; 3. Biochemical or biometric health outcomes with recognized relationships to illnesses or health conditions, such as blood pressure, dietary fat, or hemoglobin A1C; 4. Measures of disease incidence, prevalence, morbidity, and mortality;

Review	Country	Review Type	# of Studies Included	Participants	Intervention	Outcome
						5.Self-reported general health status; 6.Utilization of health services; 7.Cost of care
Shahmanesh (2008)	UK	SR	28 (11 RCTs, 17 quasi-experimental)	Female sex workers in resource poor settings	Prevention of HIV and other sexually transmitted infections	Changes in incident or prevalent HIV or STIs, condom use such as provision, disposal, or use with simulated clients, and service utilization

CA – Canada
US – United States of America
UK – United Kingdom
DK - Denmark
SR – systematic review
MA – meta-analysis
RCT – randomized controlled trials
CBA – controlled before-and-after studies
ITS - interrupted time series
CCT – controlled trials
UBA – uncontrolled before-and-after studies
* - not specified

TABLE 3: DATA EXTRACTION OF OUTCOMES FOR SOCIAL DETERMINANTS OF HEALTH

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
HEALTH CARE UTILIZATION						
Chilvers (2006)					No published trial-based data relating to the effects of supported housing for people with severe mental illness	
Ciliska (1994)	x				One study found statistically significant findings that mothers in the nurse-visited group were more aware of community services available, attended childbirth education classes more frequently, reported talking more frequently with services providers.	Interventions through prenatal and postnatal period
Ciliska (1996)	x				* Same study findings as Ciliska (1994)	
Clement (2009)				x	Three out of four studies found no significant difference.	Complex interventions to improve the health of people with limited literacy
Coldwell (2007)				x	Five studies (4 RCTs, 1observational study) found no effect (95% CI= -7%–27%, Z=1.17, p=0.24). One RCT found assertive community treatment subjects had better hospitalization outcomes.	Assertive community treatment compared to standard case management

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					The observational study found better hospitalization outcomes after assertive community treatment ([9] 95% CI= 60%–78%, Z=5.21, p<0.0001).	
Gibbon (2010)				x	Only one study reported numbers entering into drug addiction treatment services as a key outcome, although no data available for the antisocial personality disorder subgroup.	Secondary outcome Engagement with services using psychological interventions for antisocial personality disorder
Hodnett (2010)	x				Decreased likelihood antenatal hospital admission (three trials; n= 737; RR 0.79. 95% CI 0.68 to 0.92).	Secondary outcome Social support interventions for at-risk pregnant women.
Hwang (2005)	x				A retrospective study found that the intervention group had significantly reduced inpatient and outpatient healthcare utilization after being housed.	A retrospective study compared homeless people who had severe mental illness and were placed in supportive housing with matched controls not placed in housing
				x	One out of two studies found no effect on substance use, psychiatric symptoms, or outpatient mental healthcare utilization.	Two studies assigned homeless people with substance abuse to case management alone or case management with subsidized housing
Pignone (2005)			x		One study examined an intervention to affect the use of preventive care services. The non-randomized controlled trial	Use of preventive care services to improve health outcomes for patients with low literacy

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					found that an intervention consisting of a 12-minute video, coaching tool, verbal recommendation, and brochure improved mammography utilization by 11% at 6 months, but not at 24 months, when compared with a verbal recommendation and brochure alone.	
Shahmanesh (2008)	x				Two studies on service utilization for the prevention of HIV and other STIs in female sex workers in resource poor settings is effective.	
MENTAL HEALTH OUTCOMES						
Balogh (2008)				x	Two out of eight studies measured psychological and psychiatric function. MD -0.76; 90% CI -6.07 to 4.55	Assertive treatment versus standard community treatment
Chilvers (2006)					No published trial-based data relating to the effects of supported housing for people with severe mental illness	
Ciliska (1994)			x		One strong study found that at baseline there were no significant differences. At four months, there were no statistically significant differences on State or Trait anxiety in mothers. At eight months, the infants in the	Postnatal Interventions: An early intervention for lower-class teenage mothers who gave birth to preterm infants

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
	x				intervention group scored significantly higher on the Bayley mental scores than controls. Another strong study found that more counselled women than controls recovered, with a difference in recovery rate of 31.7% (95% CI 5-58, p=0.03).	Counselling by health visitors in managing postnatal depression
Ciliska (1996)	x				* Same study findings as Ciliska (1994)	
Coldwell (2007)	x				Significant reductions in psychiatric symptom severity in four out of six studies (2 out of 3 RCTs; 2 out of 3 observational studies) averaging 26% (95% CI=7%–44%, p=0.006) further symptom improvement in RCTs and a borderline significant 62% (95% CI=0%–124%, Z=1.96, p=0.05) improvement in observational studies.	Assertive community treatment for psychiatric symptoms
Egan (2007)		x x			One study suggested an increase in measures of stress-related ill health, as employees anticipated privatisation and mass redundancies. Another study found respondents who were	Psychosocial impacts of privatization Narrative summary

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
			x		unemployed and seeking work (19%), or in insecure employment (29%), reported significant increases in GHQ 12 scores (mean difference 1.56 (95% CI=1.0 to 2.2) and 1.25 (95% CI=0.6 to 2.0)) and were more likely to report >3 GP consultations in the past year (OR=2.04 (95% CI 1.1 to 3.8) and 2.39 (1.2 to 4.7). A prospective cohort study found 8 months after privatization, occupational stress indicator (OSI) mean scores (higher=worse) for mental health among clerical and administrative staff increased to 51.87, compared with 48.86 1 month before privatization (p=0.018). No significant changes in OSI mean score for manual workers or managers. Organizational changes had little effect on mental health scores for any occupational group after 20 months.	

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
				x	A controlled repeat cross-sectional study found mental and physical ill-health symptom scores using the OSI, were similar for both intervention and control groups before and after privatization ($p > 0.05$). A cross-sectional study suggested a positive relationship between the degree of private ownership and employee ill-health indicated by OSI. The overall response rate was only 14%.	
Hesse (2007)				x	Two studies reported psychiatric symptoms, showing no difference between experimental and control. The effect was small and non significant (SMD 0.01, CI=-0.23 to 0.26; Z=0.10, p=0.92).	Case management versus treatment as usual for persons with substance use disorder
				x	No study reported psychiatric symptoms.	Case management versus other specific treatments for persons with substance use disorder
Hodnett (2010)				x	Only a single trial was found which did not report the results for postnatal depression	Secondary outcome
Hwang (2005)	x				One RCT found greater improvements in psychiatric symptoms and quality of life, compared to usual care.	Interventions for homeless people with mental illness: Intensive case management with access to drop-in centre services, temporary housing, and rehabilitation services

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
	x				A longitudinal cohort study found that having more contacts with the program was associated with greater improvements in psychological distress and greater reductions in alcohol and drug problems.	Clients receiving outreach, case management, and residential treatment
	x				Three RCTs. One of the studies found that ACT was superior to usual care in reducing psychiatric hospitalizations, but not in improving psychiatric symptoms or quality of life. Another study found that ACT was superior to brokered case management in improving certain psychiatric symptoms. An older study found that ACT was superior to drop-in center services or outpatient clinic care in increasing program contacts, but not in improving psychiatric symptoms.	Assertive community treatment (ACT), in which a team of psychiatrists, nurses, and social workers with a low client-to-staff ratio provided comprehensive psychiatric care, medication monitoring, intensive case management, and crisis intervention in the community.
	x				Six studies reported findings from ACCESS. Clients at all sites experienced improvements in mental health. At intervention sites, increased integration among service agencies was	The Access to Community Care and Effective Services and Supports (ACCESS) program, which determines if greater integration and coordination among agencies within service

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					achieved but did not affect individual-level health outcomes.	systems improves outcomes among mentally ill homeless people receiving ACT.
				x	Two studies found no significant effect on mental health or substance-use outcomes. Two other studies found that a modified therapeutic community yielded minimal effects (lower depression scores but no difference in other psychiatric symptoms, substance use, or risk behaviours for HIV). Another study comparing therapeutic community and psychosocial rehabilitation program found that abstinence from substance use was higher among participants in the psychosocial rehabilitation program. In one study, the Housing First group spent less time hospitalized, but there were no differences between the groups	Interventions for homeless people with concurrent mental illness and substance abuse: Integrated programs versus separate mental health and substance abuse programs Therapeutic communities versus usual care Homeless individuals with severe mental illness were randomized to immediate independent housing with non-mandatory ACT and housing support services ("Housing First") or transitional housing followed by

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					in terms of psychiatric symptoms or substance use. A longitudinal study found that the assignment of a representative payee to manage funds for individuals receiving ACT had no effect on substance use or psychiatric symptoms.	permanent supportive housing, contingent on sobriety and adherence to psychiatric treatment.
BEHAVIOURAL PROBLEMS						
Balogh (2008)			x		Five out of eight studies measured aspects of behaviour. Only two of the studies found beneficial interventions for persons with intellectual disabilities. One study found that decreasing caseloads and increasing frequency of direct care in the participant's natural environment found a significant increase in adaptive behaviour and a decrease in maladaptive behaviour in the intervention group. The other study found improvements in behaviour among control group participants who received bereavement counselling from bereavement counsellors with little experience working with people with an intellectual disability.	Health care services for persons with an intellectual disability

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
Durlak (2010)	x				Participants exposed to the SAFE program experienced statistically significant improvements in behavioural problems compared to other programs ($p<0.05$) SMD 0.30 95% CI (0.17, 0.42) compared to SMD 0.08 95% CI (-0.05, 0.20)	After school programs that promote personal and social skills: SAFE (practices associated with previously effective skill training - sequenced, active, focused, and explicit) programs compared to other programs at post
Fisher (2008)				x	There were zero included studies.	Preventing youth gang involvement for children and young people
Gibbon (2010)				x	One study reported no statistically significant difference at 12months in any act of verbal aggression (OR 1.25; 95% CI 0.40 to 3.94, P = 0.70) or of physical aggression (OR 0.92; 95% CI 0.28 to 3.07, P = 0.90). There was also no statistically significant difference between baseline and endpoint.	CBT and usual treatment versus usual treatment: Aggression
				x	One study found no statistically significant difference over 24months (HR 0.56; 95% CI -0.19 to 1.31, P = 0.15).	'Driving Whilst Intoxicated program' and incarceration versus treatment as usual (incarceration alone): Reconviction
				x	No data for the adult drug offenders supervised by pre-adjudication court subgroup	Optimal judicial supervision versus treatment as usual (standard judicial supervision): Reconviction
Hahn (2007)	x				All school grades, 15.0% relative	Universal school-based programs

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					reduction in violent behaviour among students who received the program (65 studies) (interquartile interval (25th and 75th percentiles): -44.1%, -2.3%). -32.4% (6 studies; percentiles not calculated) -18.0% (34 studies; IQI: -44.8%, 2.5%) -7.3% (15 studies; IQI: -35.2%, 2.3%) -29.2% (4 studies; IQI: —)	for the prevention of violent and aggressive behaviour: School grades Prekindergarten and kindergarten Elementary schools Middle schools High schools
	x				All school antiviolence program strategies were associated with a reduction in violent behaviour -8.6% (10 studies; IQI: -22.9%, 18.3%) -14.0% (6 studies; IQI: —) -19.1% (30 studies; IQI: -35.2%, -2.1%) -15.0% (3 studies; IQI: —) -11.7% (12 studies; IQI: -63.65, -1.7%) -61.2% (2 studies; IQI: —) No studies	Universal school-based programs for the prevention of violent and aggressive behaviour: Intervention strategies Information conveyed Cognitive/affective Social skills Environmental change, classroom Environmental change, school Peer mediation Behaviour modification
	x				All program foci were associated with reduced violent behaviour.	Universal school-based programs for the prevention of violent and aggressive behaviour: Program focus

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					-10.3% (19 studies; IQI: -50.0%, -1.7%) -19.1% (33 studies; IQI: -44.3%, -2.8%) -6.7% (10 studies; IQI: -64.8%, 17.2%) -5.3% (2 studies; IQI: —) -29.2% (1 study; IQI: —)	General violence Disruptive or antisocial behaviour Bullying Gang activity Dating violence
	x				Programs administered by personnel were associated with reduced violent behaviour, except for school administrators/counsellors; certain effect sizes were based on a small number of studies. -41.6% (4 studies; IQI: —) -17.5% (49 studies; IQI: -44.3%, -2.3%) 34.4% (3 studies; IQI: —) -5.3% (2 studies; IQI: —) -7.3% (7studies; IQI: -42.5%, 2.3%)	Universal school-based programs for the prevention of violent and aggressive behaviour: Primary program personnel Students/peers Teachers Administrators/counsellors Nonschool personnel Researchers
	x				In environments with lower SES or high crime rates or both, effectiveness was consistent with overall study results. -1.6% (14 studies; IQI: -10.3%, -3.3%) -29.2% (15 studies; IQI: -42.5%, -	Universal school-based programs for the prevention of violent and aggressive behaviour: Community environment Not stated High crime, low SES, or both Not low SES/not high crime

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					6.7%) -21.0% (24 studies; IQI: -50.0%, -5.2%) -11.2% (38 studies; IQI: -44.4%, -1.4%)	Not stated and not low SES/not high crime
	x				-16.8% (11 studies; IQI: -44.3%, -5.2%), - 20.4% (22 studies; IQI: -40.2%, -5.0%) - 0.5% (six studies; IQI: —) -30.9% (13 studies; IQI: -44.4%, 8.0%) -10.3% (8 studies; IQI: -87.5%, -1.4%)	Universal school-based programs for the prevention of violent and aggressive behaviour: Majority race/ethnicity Schools >50% black Schools >50% white Schools >50% Hispanic No information provided No clear majority
Lucas (2008)	x				Two studies report parent ratings on problem and positive behaviours. One study reported non-significant differences; problem behaviour (SMD=0.11, p=0.184, no CI reported) favours intervention and positive behaviour (SMD=0.15, p=0.061, no CI reported) favours intervention. The other study reported mean scores for new welfare applicants and existing welfare applicants separately to	Children's mental health or emotional state: Parent rated child behaviour Measures of children's mental health or emotional state were largely assessed through child behaviour (positive behaviour, problem behaviour, and criminal behaviour).

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					give overall mean scores per group (problem behaviour intervention mean=11.57, control mean =11.51; positive behaviour intervention mean=58.4, control mean =58.3) indicating slightly better scores for control in both cases, although subgroup differences are reported as non-significant.	
				x	Another study also reports behaviour problems. In this study, subgroups could not be combined and therefore could not be reported. Within subgroups, none of the differences between intervention and control group were statistically significant.	
				x	Three studies found parent reports of involvement with police. One study on child report of 'delinquent behaviour' found a non-significant effect favouring controls (SMD=0.11, p=0.26, no CI reported). The second study on 10-17 year olds found convictions for 13/455 intervention and 12/484 control children. In contrast, the third	Police involvement

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					study reported convictions for 13/454 intervention and 11/467 control children. The differences between groups were non-significant.	
PHYSICAL HEALTH						
Ciliska (1994)				x	One strong study on early interventions for lower-class teenage mothers who gave birth to preterm infants found at baseline there were no significant differences. At four months, infants in the intervention group had statistically significant greater weight, height, and Denver development scores than the controls. At 8 months, maternal blood pressure were higher for the intervention mothers but lower for the intervention infant, but the clinical significance is questionable. Four moderate studies were also found. One study did not assess the impact of home visit alone. Another study found statistically significant positive differences between telephone support and home visits by a nurse to very-low-birth weight infants	Postnatal Interventions

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					discharged early from the hospital and the control group who stayed in hospital longer, on the number of re-hospitalizations, number of acute care visits, incidences of failure to thrive, child abuse, and foster placement. The third study found improvements in compliance with well-child care, fewer illness visits, hospitalizations and reports of neglect and abuse as a result of home visits to American disadvantaged, inner-city, black mothers. The fourth study which compared usual social services to paraprofessionals visiting homes prenatally and using a task-centered approach found no differences in the number of reports of child abuse in high risk parents.	
	x				One study found statistically significant findings that mothers in the nurse-visited group had fewer bladder infections, better nutrition, and smoked a reduced number of cigarettes per day. Another study on nurse-visited mothers found differences in	Interventions through prenatal and postnatal period

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					cases of child abused favoured the intervention but it was not statistically significant (p=0.07).	
Ciliska (1996)					* Same study findings as Ciliska (1994)	
Clement (2009)				x	Eight studies measured clinical outcomes (psychological and physical). Two studies found the intervention group had significantly better outcomes at 5% significance level, two studies found mixed results, and four studies found no significant difference. One of the studies which investigated diabetes management found no difference in Hemoglobin A1c (HbA1C) levels in the higher literacy subgroup (adjusted difference -0.5%, 95% CI -1.4% to 0.3%, p = 0.21), but in the lower literacy subgroup the intervention group had a greater reduction in HbA1c levels (adjusted difference -1.4%, 95% CI -2.3% to -0.6%, p < 0.001). For systolic blood pressure, differences were comparable for patients with low and higher literacy.	Improving the health of people with limited literacy

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
Hesse (2007)				x	Two comparisons from one study reported physical health. The effect was non-significant, but favoured case management (SMD=0.07, CI=-0.08 to 0.22).	Case management versus other specific treatments for persons with substance use disorder
Hwang (2005)	x				Two good-quality studies focused on the treatment of latent tuberculosis (TB). Compared to usual care, a cash incentive increased adherence to an appointment for initial assessment of a positive tuberculin skin test. In homeless people with latent TB receiving directly observed preventive therapy, cash incentives and noncash vouchers at each visit were equally effective in increasing completion rates.	Interventions for homeless people with tuberculosis
Lucas (2008)			x		In one study there was insufficient data to report SMD for maltreatment. Little difference was observed where alleged maltreatment took place at year 1, 2, or 3. All differences were non-significant and in year 1 and 3 favoured control. For substantiated cases differences were non-significant in year 1and 2, but significantly different at year 3 (c=3.1% i=4.5% p<0.05). In	Child maltreatment

Review (Author (Year))	Positive Effect	Negative Effect	Mixed Effect	No Effect	Main Results (e.g. effect size)	Comments
					none of the years do rates of physical/emotional or sexual abuse vary significantly. In year 1 and 3 a significant difference in rates of neglect (year 1 (c=2.6% i=4.1% p<0.01) and year 3 (c=1.5% i=2.4% p<0.1)). Neglect was the most common type of substantiated maltreatment, with 3.3% of all children in the sample experiencing one or more substantiated incidents.	
				x	Two studies on visits to the emergency department found a non-significant effect favouring treatment (OR=0.99 (0.79, 1.24)). Another study found no effect for number of injuries in the last year reported by parents at 36 and 54 months.	Accidents and sudden illness in children