Supplement 3

Evidence summaries

1.1 Addiction

Topic	Addiction
Intervention	Communication
Question (PICO)	In people who are at high risk for/engage in addiction (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing addiction (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor	Remarks
Borders, 2010, USA	Observational: Case-control study	Nr of participants: 591 people, all at-risk drinkers - 195 female - 396 male Mean (SD) age: 32.3 (10.7) years Two cohorts: - People with alcohol-use disorder (n=250) - People without alcohol-use disorder (n=341)	<u>Relevant risk factors:</u> - Talking with religious leader - Emotional /informational social support [Talking with religious leader is measured by 'How often do you talk with a priest, minister, or rabbi when you are troubled or need help in working out a problem?'] [Emotional/informational social support is measured by the Medical Outcomes Study Social Support Survey, involving items about 'talking to someone about problems']	Outcomes were measured at baseline and 6 month follow-up The survey involved demographics + Composite International Diagnostic Interview –substance abuse module to determine alcohol use disorder + religiousness + Medical Outcomes Study Social Support Survey
Fisher, 2008, USA	Observational: Cross-sectional study	Nr of participants: 208 adolescents whose mothers were previously identified as having high levels of illicit drug use. - 124 female - 84 male 129 adolescents between 12-14 years 79 adolescents between 15-17 years 66 (32%) have tried alcohol or drugs [no other demographics are available]	<u>Relevant risk factors:</u> - Talks to an adult at school about problems - Talks to an adult outside of school about problems [Only relevant data available for 'Talks to an adult at school about problems'. No data was extracted for 'Talks to an adult outside of school about problems']	Outcomes were measured once. The survey involved demographics + sexual experience + Lifetime substance use + psychosocial factors (including perceived risk from substance use, HIV/AIDS transmission knowledge, risk perception, and exposure, prayer frequency and perceived importance of religion, and importance of future education) + perceived environmental factors (including school climate, connectedness, social support) + behavioral factors using the Youth Self Report (withdrawn behavior, somatic complaints, anxiety/depression, aggression, delinquency scales) + Help-seeking behavior (talk to … about problems)

Wang, 2009, Canada	Observational: Case-control study	Nr of participants: 22092 people - Nationally representative sample - age: above 15 years old [demographics not available] Four cohorts: - Alcohol/drug dependence (n=1215) - Healthy (n=8980) - Physical illness (long-term medical condition) (n=8749) - Mood/anxiety disorders (n=3148) [Only data from alcohol/drug dependence and healthy cohorts was extracted]	<u>Relevant risk factor:</u> - Talk to others - Avoid people [Talk to others is measured by 'To deal with stress, how often do you talk to others?'] [Avoid people is measured by 'When dealing with stress, how often do you avoid being with people]	Outcomes were measured once. The survey involved demographics + Canadian Community Health Survey, Mental Health and Well-being (CCHS-1.2) The CCHS-1.2 asked 'people have different ways of dealing with stress. Thinking about the ways you deal with stress, please tell me how often you do each of the following.'
Wills, 2003, USA	Observational: Cross-sectional study	Nr of participants: 297 African American adolescents (general population) - 53% female - 47% male Mean (SD) age: 12.96 (0.81) years Substance use was surveyed.	<u>Relevant risk factors:</u> - Parent-child communication [Parent-child communication is measured by 'During the past year, how often has your caregiver talked to you about … 1. drinking alcohol, 2. using drugs, 3. smoking cigarettes.]	Outcomes were measured once. The survey involved demographics + parent-child relationship quality + parent-child communication + religiosity + Dimensions of Temperament survey + Self-control + risk-taking tendency + prototypes of substance users/sex engagers/abstainers + resistance efficacy + friends' substance use and sexual behavior + Adolescents' substance use and sexual behavior

Synthesis of findings

Outcome	Comparison/Risk factor	Effect Size	#studies, # participants	Reference
Parent-child communication Discussing alcohol use, smoking, drug use with your child				
Adolescent substance use	Parent/child communication	Not statistically significant: R=-0.00 £† (p>0.05)	1, 297 §	Wills, 2003
Talking about your problems				
Alcohol use disorder	Talking with religious leader	<u>Statistically significant:</u> 1.52±0.95 vs 1.71±1.13 MD: -0.19, 95%CI [-0.36;-0.02] (p<0.05) *With benefit from talking with a religious leader*	1, 591 (250 cases vs 341 controls)	Borders, 2010
Alcohol use disorder at 6 months in people who had AUD at baseline	Talking with religious leader	Not statistically significant: aOR: 0.89, 95%CI [0.66;1.21] £¥ (p>0.05)	1, 250 §	Borders, 2010
Alcohol use disorder	Emotional /informational social support	Not statistically significant: 4.03±1.01 vs 4.17±0.98 MD: -0.14, 95%CI [-0.30;0.02] (p>0.05)	1, 591 (250 cases vs 341 controls)	Borders, 2010

Alcohol use disorder at 6 months in people who had AUD at baseline	Emotional /informational social support	Not statistically significant: aOR: 1.32, 95%CI [0.89, 1.97] £¥ (p>0.05)	1, 250 §	Borders, 2010
Adolescent substance use	Talks to an adult at school about problems	Statistically significant: aOR: 0.36, 95%CI [0.16;0.80] £ (p<0.01) *With benefit from talking to an adult at school about problems*	1, 203 §	Fisher, 2008
Alcohol/drug dependence	Talk to others (rarely/never)	Statistically significant: 27.4 (24.0-30.8) vs 17.6 (16.4-18.8) MD: 9.8, 95%CI [6.2;13.4]* (p<0.05) *With harm from rarely talking to others*	1, 10195 (1215 cases vs 8980 controls)	Wang, 2009
Alcohol/drug dependence	Avoid people (often)	Statistically significant: 13.1 (10.7-15.4) vs 5.0 (4.2-5.7) MD: 8.1, 95%CI [5.6;10.6]* (p<0.05) *With harm from avoiding people*	1, 10195 (1215 cases vs 8980 controls)	Wang, 2009

MD: mean difference; SD: standard deviation; aOR: adjusted odds ratio (including confounders); R: correlation coefficient
* Calculations done by the reviewer(s) using Review Manager software
£ No raw data available, effect size and CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Borders, 2010	No Participants were matched for age, gender, race, education, work, setting (rural vs urban).	No	No, controlled for age, gender, race, marital status, education level, employment, setting (rural vs urban), drug use, disorder.	No	/
Fisher, 2008	No Participants were at risk children: children from addicted parents.	No	No, controlled for age and gender.	Not applicable. Outcomes measured only once.	/
Wang, 2009	No (large sample size). Although detailed demographics are not available.	No	Yes, not controlled for confounding	Not applicable. Outcomes measured only once.	/
Wills, 2003	No Sample was balanced on gender, small SD for age.	No	Yes, not controlled for confounding	Not applicable. Outcomes measured only once.	/

Certainty of the body of evidence

1. Parent-child communication about substance use (alcohol, smoking, drugs)

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size and lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to

Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

2. Talking with someone about your problems

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size and large variability of results
Inconsistency	-1	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	Parent-child communication about substance use (alcohol, smoking, drugs) There is limited evidence showing no correlation between addiction and parent-child communication. A statistically significant association between a decline in adolescent substance use and parent-child communication could not be demonstrated (Wills, 2003). Evidence is of very low quality and results are imprecise due to limited sample size and lack of data. No causal relationships can be inferred from these results. Talking with someone about your problems There is limited evidence with benefit for talking with someone about your problems. It was shown that there is a statistically significant association between a reduction of substance use risk or alcohol/drug dependence and an increase of talking to someone about your problems (Fisher 2008, Wang 2009). In a study by Borders 2010, it was shown that there is a statistically significant association between a reduction of alcohol use disorder and an increase of talking about your problems to a religious leader. However, this could not be demonstrated for talking about your problems to someone in general (Borders 2010). In addition, a statistically significant association between a decrease of alcohol use disorder at 6 months in people who had alcohol use disorder at baseline, and talking with a religious leader or someone in general about your problems, could not be demonstrated (Borders 2010). Evidence is of very low quality and results cannot be considered precise due to limited sample size and large variability of results. No causal relationships can be inferred from these results.
Reference(s)	**Articles** Borders TF, Curran GM, Mattox R, Booth BM. *Religiousness among at-risk drinkers: Is it prospectively associated with the development or maintenance of an alcohol-use disorder?* Journal of studies on alcohol and drugs 2010, 71: 136-142. Fisher HH, Eke AN, Cance JD, Hawkins SR, Lam WKK. *Correlates of HIV-related risk in African American adolescents from substance-using families: patterns of adolescent-level factors associated with sexual experience and substance use.* Journal of Adolescent Health 2008, 42: 161-169. Wang J, Keown LA, Patten SB, Williams JA, Currie SR, Beck CA, Maxwell CJ, El-Guebaly NA. *A population-based study on ways of dealing with daily stress: comparisons among individuals with mental disorders, with long-term general medical conditions and healthy people.* Soc Psychiatry Psychiatr Epidemiol 2009, 44: 666-674. Wills TA, Gibbons FX, Gerrard M, McBride Murry V, Brody GH. *Family communication and religiosity related to substance use and sexual behavior in early adolescence: a test for pathways through self-control and prototype perceptions.* Psychology af addictive behaviors 2003, 17(4): 312-323.

1.2 Aggression

Topic	Aggression
Intervention	Communication
Question (PICO)	In people who are aggressive (P), is communicating (I) effective for improving mental health and reducing aggression (O) compared to no intervention or another intervention (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Risk factor/Exposure	Remarks
Billingham, 1986, USA	Observational: Case-control study	Nr of participants: 526 people - 359 female - 167 males Median age: 20.8 years Four cohorts: - No violence (n=356) - Victim of violence (n=31) - Perpetrator of violence (n=38) - Both partners violent (n=100) [Only data from the non-violent and victim groups were extracted]	Relevant risk factor: - Reasoning	Outcomes were measured once. The survey included demographics + Conflict Tactic Scale
Cornelius, 2010, USA	Observational: Cross-sectional study	Nr of participants: 173 undergraduate students - 80% female - 20% male Mean age: 18.38 years Acts of - Physical violence: 35% - Psychological violence: 82% Victim of - Physical violence: 34% - Psychological violence: 79%	Relevant risk factors: - Repair attempts - Accepting influence - Harsh start up - Flooding - Gridlock - Four horsemen	Outcomes were measured once. The survey included demographics + Revised Conflict Tactics Scales + Dyadic Adjustment Scale + Communication skills Communication skills in response to anger include: - Repair attempts: 'minimize negative statements, use humor, take breaks' - Accepting Influence: 'Try to find mutual ground' - Harsh start-up: 'quick escalation of situation in the initial broaching of a topic' - Flooding: 'negative emotional response' - Gridlock: 'unreasonable demands, unwillingness to compromise' - Four horsemen: 'cascading negative sequence'
Goussinsky, 2017, Israel	Observational: Case-control study	Nr of participants 2004: 465 people - 80.4% female - 19.6% male - 83.4% between 18-24years Nr of participants	Relevant risk factors: - Avoidant communication - Disrespectful communication	Outcomes were measured twice: in 2004 + 2015 (each time a different sample). The survey included demographics + revised Conflict Tactics Scale + Personal and Relationships profile (PRP) + Communication

		2015: 392 people - 81.3% female - 18.7% male - 61.2% between 18-24years Three cohorts: - No violence (n=654) - Victim of violence (n=203) - Perpetrator of violence (n=167) [Only data from the non-violent and victim groups were extracted]		Problems Scale + Dominance Scale + Relationship Jealousy Scale + Partner's controlling behavior Communication Problems Scale includes: - Avoidant communication: 'I avoid talking about our problems' - Disrespectful communication: 'When my partner and I have problems, I blame him/her'
Messinger, 2012, USA Messinger, 2011, USA	Observational: Case-control study	Nr of participants: 1105 people: - 1105 females Mean age: 20.04 years Three cohorts: - No violence (n=645) - Victims of violence (n=272) - Perpetrators of violence (n=411) [Messinger 2011 involves 645 participants; 618 of those participants are also included in Messinger 2012, which is why the results of Messinger 2011 are not reported in this ES]	Relevant risk factors: - Avoidance - Reasoning - Escalating	Outcomes were measured once. The survey included demographics + the Conflict in Adolescent Dating Relationships Inventory (CADRI)
Robertson, 2007, New Zealand	Observational: Case-control study	Nr of participants: 172 people - 87 female - 85 male Three cohorts: - No violence (n=92) - Victims of violence (n=24) - Perpetrators of violence (n=56) Age: no data available (University students) [Only data from the non-violent and victim groups were extracted]	Relevant risk factor: - Communication problems (avoidant or disrespectful communication)	Outcomes were measured once. The survey included demographics + Conflict Tactics Scale + Personal Relationships Profile + Pacific Attitudes towards gender scale + Implicit association test

Synthesis of findings

Outcome	**Risk factor/Exposure**	**Effect Size**	**#studies, # participants**	**Reference**
Reasoning ['I told him that I was partly to blame', 'I agreed he was partly right', 'I gave reasons why I thought he was wrong', 'I offered a solution that I thought would make us both happy', 'I discussed the issue calmly', 'I told him how upset I was'.]				
Physical violence	Reasoning by the victim of violence	Not statistically significant: 10.57 vs 8.10 £†$	1, 387 (31 cases vs 356 controls) §	Billingham, 1986

		MD: 2.47* (p>0.05)		
Physical violence	Reasoning by the victim of violence	Not statistically significant: RR: 0.95, 95% CI[0.91;1.00] ££ (p=0.07)*	1, 917 (272 cases vs 645 controls)	Messinger, 2012
Physical violence	Reasoning received by the perpetrator of violence	Not statistically significant: RR: 0.98, 95% CI[0.91;1.06] ££ (p=0.62)*	1, 1056 (411 cases vs 645 controls)	Messinger, 2012
Repair attempts [Minimize negative statements, use humor, take breaks]				
Physical violence	Repair attempts by the victim of violence	Statistically significant: Correlation: -0.30 £ (p<0.01) *With benefit from repair attempts*	1, 173 §	Cornelius, 2010
Psychological violence	Repair attempts by the victim of violence	Statistically significant: Correlation: -0.046 £ (p<0.01) *With benefit from repair attempts*	1, 173 §	Cornelius, 2010
Accepting influence [Try to find mutual ground]				
Physical violence	Accepting influence by the victim of violence	Statistically significant: Correlation: -0.29 £ (p<0.01) *With benefit from accepting influence*	1, 173 §	Cornelius, 2010
Psychological violence	Accepting influence by the victim of violence	Statistically significant: Correlation: -0.42 £ (p<0.01) *With benefit from accepting influence*	1, 173 §	Cornelius, 2010
Avoidance ['I left the room to cool down', 'I put off talking until we calmed down', 'when my partner wants to talk about our problems, I try to avoid talking about them']				
Physical violence	Avoidant communication by the victim of violence	Statistically significant: 1.74 ± 0.52 vs 1.53 ± 0.48 $ MD: 0.21, 95%CI [0.13;0.29] (p<0.00001)* *With harm for avoidant communication*	1, 857 (203 cases vs 654 controls)	Goussinsky, 2017
Physical violence	Temporary conflict avoidance by the victim of violence	Not statistically significant: RR: 1.06, 95% CI[0.98;1.15] ££ (p=0.16)*	1, 917 (272 cases vs 645 controls)	Messinger, 2012
Physical violence	Temporary conflict avoidance received by the perpetrator of violence	Not statistically significant: RR: 1.04, 95% CI[0.93;1.16] ££ (p=0.48)*	1, 1056 (411 cases vs 645 controls)	Messinger, 2012
Escalating ['I said things to make him/her angry', 'I spoke to him/her in a hostile or mean tone of voice', 'I insulted him/her with put-downs', 'I ridiculed or made fun of him/her in front of others', 'I blamed him/her for the problem', 'I brought up something bad that he/she had done in the past']				
Physical violence	Harsh start up by the victim of violence (quick escalation of situation in the initial broaching of a topic)	Statistically significant: Correlation: 0.36 £ (p<0.01) *With harm from harsh start up*	1, 173 §	Cornelius, 2010
Physical violence	Gridlock by the victim of violence (unreasonable demands, unwillingness to compromise)	Statistically significant: Correlation: 0.26 £ (p<0.01) *With harm from gridlock*	1, 173 §	Cornelius, 2010
Physical violence	Flooding by the victim of violence (negative emotional response, i.e. cry)	Statistically significant: Correlation: 0.33 £ (p<0.01) *With harm from flooding*	1, 173 §	Cornelius, 2010
Physical violence	Four horsemen by the victim of violence (cascading negative sequence)	Statistically significant: Correlation: 0.31 £ (p<0.01) *With harm from four horsemen*	1, 173 §	Cornelius, 2010
Physical violence	Disrespectful communication by the victim of violence	Statistically significant: 2.19 ± 0.57 vs 1.84 ± 0.54 $ MD: 0.35, 95%CI [0.26;0.44] (p<0.00001)* *With harm for disrespectful communication*	1, 857 (203 cases vs 654 controls)	Goussinsky, 2017
Physical violence	Escalation used by the victim of violence	Statistically significant: RR: 1.22, 95% CI[1.19;1.25] $££	1, 917 (272 cases vs 645 controls)	Messinger, 2012

		(p<0.0001)* *With harm from escalation*		
Physical violence	Escalation received by the perpetrator of violence	Statistically significant: RR: 1.15, 95% CI[1.13;1.18] ££ (p<0.0001)* *With harm from escalation*	1, 1056 (411 cases vs 645 controls)	Messinger, 2012
Psychological violence	Harsh start up by the victim of violence (quick escalation of situation in the initial broaching of a topic)	Statistically significant: Correlation: 0.58 £ (p<0.01) *With harm from harsh start up*	1, 173 §	Cornelius, 2010
Psychological violence	Gridlock by the victim of violence (unreasonable demands, unwillingness to compromise)	Statistically significant: Correlation: 0.43 £ (p<0.01) *With harm from gridlock*	1, 173 §	Cornelius, 2010
Psychological violence	Flooding by the victim of violence (negative emotional response, i.e. cry)	Statistically significant: Correlation: 0.53 £ (p<0.01) *With harm from flooding*	1, 173 §	Cornelius, 2010
Psychological violence	Four horsemen by the victim of violence (cascading negative sequence)	Statistically significant: Correlation: 0.54 £ (p<0.01) *With harm from four horsemen*	1, 173 §	Cornelius, 2010
Communication problems [disrespectful + avoidant communication]				
Physical violence	Communication problems by the victim of violence	Statistically significant: 8.56 vs 6.36 £$ MD: 2.2* (p<0.001) *With harm from communication problems*	1, 116 (24 cases vs 92 controls) §	Robertson, 2007

Mean ± SD (unless otherwise indicated), MD: mean difference, RR: risk ratio, SD: standard deviation
$ The outcome measures (means) and effect measures (mean differences) represent the risk factor, not the outcome "violence"
* Calculations of MD, RR, 95%CI and/or p-values done by the reviewer using Review Manager software or excel
£ No raw data/SD's available, effect size and CI cannot be calculated
££ No raw data available
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Billingham, 1986	No Note: authors had no operational definition for 'in a dating relationship'	Yes, a questionnaire was used – potential social desirability bias + recall bias	Yes, there was no control for confounding factors	Not applicable No follow-up taken place	-
Cornelius, 2010	No Note: homo-sexual relationships were excluded.	Yes, a questionnaire was used – potential social desirability bias + recall bias	Yes, there was no control for confounding factors	Not applicable No follow-up taken place	-
Goussinsky, 2017	No	Yes, a questionnaire was used – potential social desirability bias + recall bias	Yes, there was no control for confounding factors with regards to the extracted data	Not applicable No follow-up taken place	-
Messinger, 2012	No	Yes, a questionnaire was used – potential social desirability bias + recall bias	No, controlled for experiencing child sexual abuse, relationship importance, relationship length, number of pregnancies, age, and race-ethnicity	Not applicable No follow-up taken place	-
Robertson,	No	Yes, a questionnaire was	Yes, there was no	Not applicable	-

2007		used – potential social desirability bias + recall bias	control for confounding factors	No follow-up taken place	

Certainty of the body of evidence

1. *Reasoning*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size + lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

2. *Repair attempts*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

3. *Accepting influence*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

4. *Avoidance*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

5. *Escalation*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample sizes
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to

Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

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6. *Communication problems*

	Initial grading e.g. Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size and lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading e.g. Very low [D]**	

Conclusion	Reasoning There is limited evidence concerning the risk of physical violence in case of reasoning. A statistically significant decreased risk of physical violence in case of reasoning compared to not using reasoning could not be demonstrated ((Messinger 2012, Billingham 1986). Evidence is of very low quality and results of these studies are imprecise due to limited sample size and lack of data. Note: reasoning includes 'I told him that I was partly to blame', 'I agreed he was partly right', 'I gave reasons why I thought he was wrong', 'I offered a solution that I thought would make us both happy', 'I discussed the issue calmly', 'I told him how upset I was'. Repair attempts There is limited evidence with benefit from repair attempts. It was shown that there is a statistically significant association between a decrease in physical and psychological violence and repair attempts (Cornelius 2010). Evidence is of very low quality and results cannot be considered precise due to limited sample size and lack of data. No causal relationships can be inferred from these results. Note: repair attempts include 'minimizing negative statements, use humor, take breaks' Accepting influence There is limited evidence with benefit for accepting influence. It was shown that there is a statistically significant association between a decrease of physical and psychological violence and accepting influence (Cornelius 2010). Evidence is of very low quality and results cannot be considered precise due to limited sample size and lack of data. No causal relationships can be inferred from these results. Note: accepting influence includes trying to find mutual ground Avoidant communication There is limited evidence with harm for avoidant communication. It was shown that avoidant communication increased the risk of physical violence compared to no avoidant communication (Goussinsky 2017). Evidence is of very low quality. Note: avoidant communication includes 'when my partner wants to talk about our problems, I try to avoid talking about them'. Temporary conflict avoidance There is limited evidence showing no correlation between temporary conflict avoidance and physical violence. It was shown that temporary conflict avoidance did not result in a statistically significant decreased risk of physical violence, compared to no temporary conflict avoidance (Messinger 2012). Evidence is of very low quality. Note: avoidance includes 'I left the room to calm down'. Escalation There is limited evidence with harm for escalating. It was shown that escalation resulted in a statistically

	significant increased risk of physical violence compared to not escalating (Messinger 2012, Goussinsky 2017). Evidence is of very low quality. Note: escalating includes 'I said things to make him/her angry', 'I spoke to him/her in a hostile or mean tone of voice', 'I insulted him/her with put-downs', 'I ridiculed or made fun of him/her in front of others', 'I blamed him/her for the problem', 'I brought up something bad that he/she had done in the past'. In addition, it was shown that there is a statistically significant association between an increase of physical and psychological violence and a quick escalation in the initial broaching of a topic, unreasonable demands/unwillingness to compromise, a negative emotional response, and cascading a negative sequence (Cornelius 2010). Evidence is of very low quality and results cannot be considered precise due to limited sample size. No causal relationships can be inferred from these results. Communication problems There is limited evidence with harm for communication problems. It was shown that communication problems resulted in a statistically significant increased risk of physical violence compared to no communication problems (Robertson 2007). Evidence is of very low quality and results cannot be considered precise due to limited sample size and lack of data.
Reference(s)	**Articles** Billingham RE, Sack AR. *Courtship Violence and the Interactive Status of the Relationship.* Journal of Adolescent Research 1986, 1(3): 315-325. Cornelius TL, Shorey RC, Beebe SM. *Self-reported Communication Variables and Dating Violence: Using Gottman's Marital Communication Conceptialization.* J Fam Viol 2010, 25: 439-448. Goussinsky R, Michael K, Yassour-Borochowitz D. *Relationship Dynamics and Intimate Partner Violence Among Israeli College Students: The Moderating Effect of Communication Problems.* Journal of Interpersonal Violence 2017, 00 (0):1-22 Messinger AM, Davidson LL, Rickert VI. *IPV Among Adolescent Reproductive Health Patients: The Role of Relationship Communication.* Journal of Interpersonal Violence 2011, 26(9): 1851-1867. Messinger AM, Rickert VI, Fry DA, Lessel H, Davidson LL. *Revisiting the Role of Communication in Adolescent Intimate Partner Violence.* Journal of Interpersonal Violence 2012, 27(14): 2920-2935. Robertson K, Murachvor T. *It takes two to Tangle: Gender Symmetry in Intimate Partner Violence.* Basic and Applied Social Psychology 2007, 29(2): 109-118. **Systematic reviews** Hallett N, Dickens GL. *De-escalation of aggressive behavior in healthcare settings: Concept analysis.* International Journal of Nursing Studies 2017, 75: 10-20. Price O, Baker J, Bee P, Lovell K. *Learning and performance outcomes of mental health staff training in de-escalation techniques for the management of violence and aggression.* The British Journal of Psychiatry 2015, 206: 447-455.

1.3 Anxiety

Topic	Anxiety
Intervention	Communication
Question (PICO)	In people who are at high risk for/engage in anxiety (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing anxiety (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Risk factor	Remarks
Dyregrov, 1994, Norway	Observational: Cross-sectional study	63 students who's teacher was murdered, 30 female, 33 male; 15-16 years of age	Relevant risk factors: - Talked with friends about event - Talked with parents about event - Talked in class about the event	Outcomes were measured once. The survey included demographics + how well they knew teacher and other victims + how they were informed by event + to what degree they had talked about the event in class and with family and friends + list of posttraumatic symptoms.
Edwards, 2004, Australia	Observational: Cross-sectional study	Newly diagnosed cancer patients (n=48, 32 female, 16 male; mean (SD) age: 54.6 (10.66) years) and their adult relatives (n=99, 57 female, 42 male; mean (SD) age: 44.17 (15.87) years)	Relevant risk factor: Communication between family members (degree to which verbal communication is clear in terms of content, and direct in the sense that the person spoken to is the person for whom the message is intended)	Outcomes were measured once. The survey included demographics + Beck Depression Inventory-Fastscreen + State Anxiety Scale of the State-Trait Anxiety Inventory + Illness concerns + Self-Rated Karnofsky performance scale + Family Relationships Index + McMaster Family Assessment Device + FAD
Fite, 2013, USA	Observational: Cross-sectional study	3385 boys from the youngest cohort of the Pittsburgh Youth Study (PYS), average age 16 years	Relevant risk factor: Poor parent-adolescent communication (higher scores indicate poorer parent-child communication)	Outcomes were measured at age 16 and at age 19. Due to missing data, only data from 289 youth were included in analyses. Measures: Demographic information, Reactive-Proactive Aggression Questionnaire, Youth Self Report (YSR), Revised Parent-Adolescent Communication Form, Youth Self-Report and Adult Self-Report for depression and anxiety symptoms
Haun, 2014, Germany	Observational: Cross-sectional study	189 pairs of cancer patients (62.8±10.3 years; 60 female and 129 male) and their caregivers (58.2±12.4 years; 138 female and 51 male)	Relevant risk factor: Perception of the patients' degree of open communication regarding cancer-related aspects.	Identified from related citations from 'Jeong 2016' Outcomes were measured once. The questionnaire included the Questionnaire on Distress in Cancer Patients (QSC-R10) – Short form, the ultra-brief Patient Health Questionnaire (PHQ-4) and the Generalized Anxiety Disorder Scale-2 (GAD-2).

				Caregivers also completed the Caregiver Strain Index (CSI), the Supportive Care Needs Survey (SCNS-P&C-G) and the caregivers' version of the Disclosure Scale of the Cancer Communication Assessment Tool (CCAT-F).
Hodgson, 1997, UK	Observational: Cross-sectional study	757 cancer patients referred to 6 home care services in Ireland over a period of 6 months. Mean age (median): 66 (69) years 508 patients died in care.	Relevant risk factor: Patient/family communication	Weekly assessment of family members' anxiety. Family member = patient's main carer or significant other. The survey included the Karnofsky Index + Support Team Assessment Schedule (STAS), containing items relating to physical symptoms, psychological functioning of patient and carer, and communication aspects.
Howell, 2015, USA	Observational: Cross-sectional study	32 recently bereaved children (mean age (SD) 9.56 (2.02), 50% female) and their surviving caregiver (n=32, mean age (SD) 42.03 (8.04), 78.1% female)	Relevant risk factor: Child emotional caregiving and Positive parental reinforcement	Identified from reference list of 'Wardecker 2017'. Outcomes were measured once. The survey included demographics + Adverse Life Events section of the Infant Toddler Social and Emotional Assessment (ITSEA) + Short Mood and Feelings Questionnaire (SMFQ) + Multidimensional Anxiety Scale for Children (MASC) + Total Anxiety Score + UCLA PTSD Reaction Index + Active Inhibition Scale + Parent Perception Inventory + Sharing Emotions Inventory
Jeong, 2016, Korea	Observational: Cross-sectional study	296 pairs of patients with cancer and caregiver, 106 female, 190 male; mean (SD) age: 58.2 (12.8) years	Relevant risk factor: Family avoidance of cancer communication: extent to which the patient's family avoids talking about the cancer experience	Outcomes were measured once. The survey included demographics + family avoidance of cancer communication + support from medical professionals + support from family + Hospital Anxiety and Depression Scale (HADS).
Lautrette, 2007, France	Experimental: Randomized controlled trial	Intervention group (n=63): Patients: median age (IQR): 74 (56-80); 33 male, 30 female Family members: median age (IQR): 54 (47-58); 17 male, 46 female Control group (n=63): Patients: median age (IQR): 68 (56-76); 37 male, 26 female Family members: median age	Intervention: End-of-life conference (to inform the family that death was imminent) was conducted according to specific guidelines (VALUE objectives) and practical arrangements: planned several hours in advance; attended by physician in charge, other physicians, nurses, psychologists, other health	While conducting the conference, the intensivist sought to achieve five objectives described in the Guidelines. Anxiety was assessed using the Hospital Anxiety and Depression Scale. HADS subscale scores >8 where considered to indicate clinically significant symptoms of anxiety.

		(IQR): 54 (46-64); 12 male, 51 female Study period: May 2005-October 2005	professionals, unrestricted number of family members, and (optionally) a social worker and/or spiritual representative; always in a separate quiet room. In addition, at the end of the conference, the family member included in the study was handed a bereavement information leaflet. Control group: End-of-life conference was conducted routinely: not scheduled in advance; led by senior physician; nurse may or may not attend; at least one family member present; sometimes in a separate room.	
Shin, 2016, Seoul	Observational: Cross-sectional study	990 patient-caregiver pairs Patients: Mean age (SD) 59.5±12.9 years 459 male, 531 female Caregivers: Mean age (SD) 50.0±14.5 years 375 male, 615 female	Relevant risk factors: Patient and caregiver perceived avoidance of communication	Outcomes were measured The survey included demographics + Family Avoidance of Communication about Cancer (FACC) + self-reported communication behavior of disclosure and holding back + Cancer Communication Assessment Tool for Patients and Families (CCAT-PF) + Hospital Anxiety and Depression Scale (HADS) + European Organization on Research and Treatment on Cancer-Quality of Life Questionnaire core module (EORTC QLQ C30) + Caregiver Quality of Life Scale.
Wallin, 2016, Sweden	Observational: Cross-sectional study	174 siblings of a deceased child, aged 19-33 years (12 to 25 years of age when they lost their brother or sister), 73 men, 101 women.	Relevant risk factor: Communication near/after loss of sibling	Outcomes were measured once. The survey included the Hospital Anxiety and Depression Scale (HADS) + source of information about siblings illness + information and communication near end of life + communication following the loss.
Wardecker, 2017, USA	Observational: Cross-sectional study	39 bereaved children (18 females, 21 males) and their surviving caregivers (30 females)	Relevant risk factors: Caregiver's positive emotion words	Outcomes were measured once. Survey included demographics + Multidimensional anxiety scale for children (MASC) + Short mood and feelings questionnaire (SMFQ) + active inhibition scale + parent perception inventory (PPI) + beck depression inventory (BDI)
Yu, 2015, Australia	Observational: Cross-sectional	Nr of participants: 338 women with breast	Relevant risk factors: Communication avoidance	Outcomes were measured once.

	study	cancer, mean age (SD): 53.5 years (9.22)	by women and partners	Survey included demographics + communication avoidance + Depression, Anxiety and Stress Scale (DASS) + coping (Brief COPE) + Physical Well-Being Subscale of Functional Assessment of Cancer Therapy

Synthesis of findings

Outcome	Risk factor	Effect Size	#studies, # participants	Reference
Talking with others				
General anxiety	Talked with friends about event	Statistically significant: β: -0.24 (p<0.05) *With benefit for talking with friends about event*	1, 63 §	Dyregrov, 1994
	Talked with parents about event	Not statistically significant: Partial r: 0.26 (p>0.05) †		
	Talked in class about event	Not statistically significant: Partial r: 0.12 (p>0.05) †		
Specific anxiety	Talked with friends about event	Not statistically significant: Partial r: -0.19 (p>0.05) †		
	Talked with parents about event	Statistically significant: β: -0.27 (p<0.05) *With benefit for talking with parents about event*		
	Talked in class about event	Not statistically significant: Partial r=0.01 (p>0.05) †		
Anxiety (HADS)	Talked less than monthly vs talked weekly or more to others (outside family) before death of sibling	Statistically significant: 21/90 vs 7/84 $ § RR: 2.8, 95%CI [1.3;6.2] (p<0.05) *With harm for talking less than monthly*	1, 90 vs 84	Wallin, 2016
Communication (not specified)				
Anxiety (STAI)	Communication	Statistically significant: β: 0.214, 95%CI [0.063;0.365]* (p<0.001) *With harm from indirect and unclear communication*	1, 147 §	Edwards, 2004
Anxiety	Poor parent-adolescent communication	Not statistically significant: β: -0.01, 95%CI [-0.108;0.088]* (p>0.05)	1, 289 §	Fite, 2013
	Parent-adolescent communication x reactive aggression	Statistically significant: β: 0.18, 95%CI [0.0428;0.3172]* (p<0.05) *With benefit for good communication in adolescents with higher reactive aggression*		
	Parent-adolescent communication x proactive aggression	Not statistically significant: β: -0.10, 95%CI [-0.257;0.057]* (p>0.05)		
Family anxiety (STAS)	Patient/family communication	Statistically significant: Chi^2=43.01 (p<0.01) *With harm for lower patient/family communication*	1, 747	Hodgson, 1997
Anxiety	Child emotional expression	Statistically significant: β: -0.62, 95%CI [-0.855;-0.385]* (p<0.001) *With benefit from child emotional expression*	1, 32 §	Howell, 2015
	Positive parental reinforcement	Not statistically significant: β: -0.46, 95%CI [-0.930; 0.0104]* (p>0.05)	1, 32 §	

		With benefit from positive parental reinforcement		
Avoidance of communication				
Anxiety (HADS)	Family avoidance of cancer communication	Statistically significant: β: 0.249 (p<0.0001) *With harm from family avoidance of cancer communication*	1, 296 §	Jeong, 2016
Patients' anxiety	Patient-perceived Family avoidance of cancer communication	Statistically significant: β: 0.077, 95%CI [0.059;0.095]* (p<0.001) *With harm for patient-perceived family avoidance of communication*	1, 990 vs 990	Shin, 2016
Caregivers' anxiety		Statistically significant: β: 0.024, 95%CI [0.0064;0.0416]* (p=0.005) *With harm for patient-perceived family avoidance of communication*		
Patient's anxiety	Caregiver perceived Family avoidance of cancer communication	Not statistically significant: β: -0.001, 95%CI [-0.0167;-0.0147]* (p=0.849)	1,990 vs 990	Shin, 2016
Caregivers' anxiety		Statistically significant: β: 0.040, 95%CI [0.0243;0.0557]* (p<0.001) *With harm for caregiver-perceived family avoidance of communication*		
Anxiety (HADS)	Avoid talking to parents about deceased sibling	Statistically significant: 21/96 vs 7/77 $§ RR: 2.4, 95%CI [1.1, 5.4] (p<0.05) *With harm for avoiding to talk to parents*	1, 96 vs 77	Wallin, 2016
Anxiety	Communication avoidance by women with breast cancer	Statistically significant: r:0.25 (p<0.01) *With harm for communication avoidance by women with breast cancer*	1, 338 §	Yu, 2015
	Partner communication avoidance	Statistically significant: r:0.23 (p<0.01) *With harm for partner communication avoidance*		
Other				
Anxiety (GAD2)	Caregivers perceived degree of disclosure by the patients	Statistically significant: r=0.31 (p<0.0001) *With harm from lower perceived degree of disclosure*	1, 189 §	Haun, 2014
Symptoms of anxiety	End-of life conference vs usual practice	Statistically significant: 25/56 vs 35/52 § OR: 0.39, 95%CI [0.18;0.86] (p=0.02) *In favour of end-of-life conference*	1, 56 vs 52	Lautrette, 2007
Child's anxiety symptoms	Caregivers positive emotion words	Not statistically significant: β: -0.16 (p>0.05) †	1, 39 §	Wardecker, 2017

OR: odds ratio, RR: risk ratio, β: parameter estimate in regression model, r: correlation coefficient
$ The outcome measures and effect measures represent the risk factor, not the outcome
* Calculation of CI from SE done by the reviewer using Excel
£ No raw data available, effect size and CI cannot be calculated.
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence
Observational studies

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Dyregrov, 1994	No	Yes, cross-sectional design, data collected with questionnaire	No, multivariate analyses performed	No, only 4.5% loss to follow-up	
Edwards, 2004	No	Yes, cross-sectional design, data collected	No, relevant interactions taken	No	

		with questionnaire	into account in different models		
Fite, 2013	No	Yes, self-reported questionnaires introduce risk of recall bias, although validity and internal consistencies were high	No, relevant covariates were included in the multivariate model	No, drop-out rate 14%; however, some variables were sign. diff. between completers and drop-outs)	Unclear (COI not mentioned)
Haun, 2014	No	Yes, cross-sectional design, data collected with questionnaire	Yes, not controlled for confounding factors	No, only data from complete questionnaires were used	
Hodgson, 1997	No	Yes, cross-sectional design, data collected with questionnaire	Yes, not controlled for confounding factors	No, only 10 patients (1.3%) were not included in analysis since they did not have carers.	Only chi² analysis performed
Howell, 2015	Yes, children and their caregivers were recruited from bereavement groups	Yes, cross-sectional design, data collected with questionnaire	No, linear regression analysis performed	No, no loss to follow-up	
Jeong, 2016	No	Yes, cross-sectional design, data collected with questionnaire	No, multivariate analyses performed	No	Use of HADS scale to measure anxiety (based only on symptoms) Errors in data tables, values for SE not possible
Shin, 2016	No	Yes, cross-sectional design, data collected with questionnaire	No, multivariable linear regression analyses performed	No loss to follow-up	
Wallin, 2016	No	Yes, cross-sectional design, data collected with questionnaire	Yes, no multivariate analyses performed	No, data from 1 person was excluded due to missing information.	Perceptions of communication during siblings last month of life might have been influenced by current anxiety.
Wardecker, 2017	Yes, majority of children and family were recruited from bereavement support groups in which caregivers may have greater knowledge regarding how to speak with their bereaved youth	Yes, cross-sectional design, data collected with questionnaire	No, no multivariate analyses performed for outcome of interest (but it was not significant)	No loss to follow-up	
Yu 2015	Yes, only women.	Yes, cross-sectional design, data collected through questionnaires.	Yes, no multivariate analyses performed for anxiety and communication avoidance.	No, no loss to follow-up	

Experimental studies

Author, Year	**Lack of allocation concealment**	**Lack of blinding**	**Incomplete accounting of outcome events**	**Selective outcome reporting**	**Other limitations**
Lautrette, 2007	Lack of randomization: no Lack of allocation concealment: no, Sealed consecutively	participants: unclear personnel: unclear	Yes, 17% loss to follow up in control group and 11 % in intervention group.	No, all mentioned outcomes are reported	

	numbered envelopes containing the name of the assigned group were sent to each ICU.	outcome assessors: no			

Certainty of the body of evidence

Talking with others

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size/low number of events/lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Communication (not specified)

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size or lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Avoidance of communication

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size/low number of events/lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

End-of-life conference for family of patients dying in the ICU

	Initial grading High [A]	Downgrading due to
Limitations of study design	0	See table 'Quality of evidence'
Imprecision	-1	Large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Moderate [B]**	

Other

	Initial grading Low [C]	Downgrading due to

Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size/lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	There is limited evidence with **benefit for talking with friends/others**. It was shown that there is a statistically significant association between a decrease in general anxiety and talking with friends and talking weekly or more to others (Dyregrov 1994, Wallin 2016) and between a decrease in specific anxiety and talking with parents (Dyregrov 1994). However, a statistically significant association between a decrease in general anxiety and talking with parents or in class could not be demonstrated (Dyregrov 1994). Also, a statistically significant association between a decrease in specific anxiety and talking with friends or in class could not be demonstrated (Dyregrov 1994). Evidence is of very low quality and results of these studies are imprecise due to limited sample size and lack of data. No causal relationships can be inferred from these results. There is limited evidence with **benefit for communication**. It was shown that there is a statistically significant association between an increase in anxiety and indirect and unclear communication (Edwards 2004). It was also shown that there is a statistically significant association between a decrease in anxiety and good communication in adolescents with higher reactive aggression (Fite 2013). Furthermore, it was shown that there is a statistically significant association between an increase in family anxiety and lower patient/family communication (Hodgson 1997), and between a decrease in anxiety and child emotional expression (Howell 2015). However, a statistically significant association between a decrease in anxiety and poor parent-adolescent communication or good communication in adolescents with higher proactive aggression could not be demonstrated (Fite 2013). Furthermore, a statistically significant decrease association between a decrease in anxiety and positive parental reinforcement could not be demonstrated (Howell 2015). Evidence is of very low quality and results of these studies are imprecise due to limited sample size or lack of data. No causal relationships can be inferred from these results. There is limited evidence with **harm for avoidance of communication**. It was shown that there is a statistically significant association between an increase in anxiety and family avoidance of communication (Jeong 2016), between an increase in patients' and caregivers' anxiety and patient-perceived family avoidance of communication (Shin 2016), and between an increase in caregivers' anxiety and caregiver-perceived family avoidance of communication (Shin 2016). It was shown that there is a statistically significant association between an increase in anxiety and avoiding to talk to parents (Wallin 2016). There is limited evidence with **harm for lower perceived degree of disclosure**. It was shown that there is a statistically significant association between an increase in anxiety and a lower perceived degree of disclosure (Haun 2014). Evidence is of very low quality and results of these studies are imprecise due to limited sample size. No causal relationships can be inferred from these results. There is limited evidence in **favour of end-of-life conference**. It was shown that end-of-life conference resulted in a statistically significant decrease of anxiety, compared to usual practice (Lautrette 2007). Evidence is of moderate quality and results of this study are imprecise due to low number of events. Note: The specific guidelines for the end-of-life conferences include: • VALUE objectives: to **v**alue what the family members said, to **a**cknowledge the family members' emotions, to **l**isten, to **u**nderstand who the patient was as a person, and to **e**licit questions from the family members. • Practicalities: planned several hours in advance; attended by physician in charge, other physicians, nurses, psychologists, other health professionals, unrestricted number of family members, and (optionally) a social worker and/or spiritual representative; always in a separate quiet room. • Providing a bereavement information leaflet. Furthermore, a statistically significant association between a decrease in child's anxiety symptoms and caregivers positive emotion words could not be demonstrated (Wardecker 2017).

	Evidence is of very low quality and results of this study are imprecise due to limited sample size and lack of data. No causal relationships can be inferred from these results.
Reference(s)	**Articles** Dyregrov A, Kristoffersen JI, Matthiesen SB, Mitchell JT. *Gender differences in adolescents' reactions to the murder of their teacher*. Journal of Adolescent Research 1994, 9(3):363-383 Edwards B, Clarke V. *The psychological impact of a cancer diagnosis on families: the influence of family functioning and patients' illness characteristics on depression and anxiety*. Psycho-Oncology 2004, 13:562-576 Fite PJ, Rubens SL, Preddy TM, Raine A, Pardini DA. *Preactive/Proactive Aggression and the Development of Internalizing Problems in Males: The Moderating Effect of Parent and Peer Relationships*. Aggressive Behavior 2014, 40:69-78 Haun MW, Sklenarova H, Brechtel A, Herzog W, Hartmann M. *Distress in Cancer Patients and Their Caregivers and Association with the Caregivers' Perception of Dyadic Communication*. Oncol Res Treat 2014, 37:384-388 Hodgson C, Higginson I, McDonnell M, Butters E. *Family anxiety in advanced cancer: a multicenter prospective study in Ireland.* British Journal of Cancer 1997, 76(9):1211-1214 Howell KH, Barrett-Becker EP, Burnside AN, Wamser-Nanney R, Layne CM, Kaplow JB. *Children Facing Parental Cancer Versus Parental Death: The Buffering Effects of Positive Parenting and Emotional Expression*. J Child Fam Stud 2015, 25:152-164 Jeong A, Shin DW, Kim SY, Yang HK, Park J-H. *Avoidance of cancer communication, perceived social support, and anxiety and depression among patients with cancer.* Psycho-Oncology 2016, 25:1301-1307 Lautrette A, Darmon M, Megarbane B, Joly LM, Chevret S, Adrie C, Barnoud D, Bleichner G, Bruel C, Choukroun G, Curtis R, Fieux F, Galliot R, Garrouste-Orgeas M, Georges H, Goldgran-Toledano D, Jourdain M, Loubert G, Reignier J, Saidi F, Souweine B, Vincent F, Barnes NK, Pochard F, Schlemmer B, Azoulay E. *A communication strategy and brochure for relatives of patients dying in the ICU*. N Eng J Med 2007, 356(5):469-478 Shin DW, Shin J, Kim SY, Yang H-K, Cho J, Youm JH, Choi GS, Hong NS, Cho B, Park J-H. *Family avoidance of communication about cancer: a dyadic examination*. Cancer Res Treat. 2016, 48(1):384-392 Wallin AE, Steineck G, Nyberg T, Kreicbergs U. *Insufficient communication and anxiety in cancer-bereived siblings: A nationwide long-term follow-up*. Palliative and Supportive Care 2016, 14:488-494 Wardecker BM, Kaplow JB, Layne CM, Edelstein RS. *Caregivers' positive emotional expression and children's psychological functioning after parental loss.* J Child Fam Stud 2017, 26:3490-3501 Yu Y, Sherman KA. *Communication avoidance, coping and psychological distress of women with breast cancer*. J Behav Med 2015, 38:565-577

1.4 Burnout

Topic	Burnout
Intervention	Communication
Question (PICO)	In people with burnout (P), is communication with family, friends, or somebody else (I) effective for improving mental health (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor/Exposure	Remarks
Gupta, 2011, Canada	Observational: cross-sectional study	63 occupational therapists with complete data (5 male, 58 female, mean age 40.2y), out of 2,587 occupational therapists who were sent the questionnaire (response rate 2.4%)	Relevant risk factors (coping strategies): - Discuss work frustrations with spouse/partner/ family [No quantitative data were reported on "discuss work frustrations with colleagues" and "communicate with my managers". Other coping strategies included in the questionnaire were not extracted]	Identified from 20 most similar studies to Lemaire (2010) in PubMed. Burnout was measured using the Emotional Exhaustion (EE) subscale from the Maslach's Burnout Inventory-General Survey (MBI-GS). [No quantitative data on the Cynism and Professional efficacy subscales were provided]
Kim, 2009, USA	Observational: cross-sectional study	478 social workers with complete data, out of 1500 who were sent the questionnaire (response rate 32%). No data on age and sex distribution.	Relevant risk factors: 4 types of supervisory communication: - Job-relevant - Upward - Positive relationship - Negative relationship [role stress risk factors were not extracted]	Burnout was measured using the EE and Depersonalization (DP) subscales from the MBI-GS. For modeling reasons, the EE subscale was decomposed into two item parcels (EE1 and EE2). Results are very similar and only EE1 is shown in the synthesis of findings. Depersonalization is psychological withdrawal from relationships and the development of a negative and cynical attitude. Population size for study results presented in Table 1 is unclear (whole sample of 478, subsample of 405 or subsample of 211).
Lemaire, 2010, Canada	Observational: cross-sectional study	1151 physicians with complete data (665 male, 486 female, mean age 49y), out of 2957 physicians who were sent the questionnaire (response rate 39%)	Relevant risk factors (coping strategies): - Talk it over with colleagues - Keep stress to myself - Talk about stress with spouse [Other coping strategies included in the questionnaire were not extracted]	Burnout was measured using the EE subscale from the MBI-GS.
Nieuwen-huijsen, 2004, Netherlands	Observational: prospective cohort study	84 employees on sick leave due to self-reported mental health problems (35 male, 49 female, mean age 44.2y)	Relevant risk factors: - Supervisory communication with employee	No direct measure of burnout. The outcome variables were partial and full return to work (RTW) after sick leave for

			[2 other aspects of supervisory behavior, promoting gradual return to work and consulting with professionals, were not extracted]	mental health problems. Positive supervisory communication was defined as contact with employee at least once every two weeks during sick leave plus a follow-up meeting with employee after first return to work.

Synthesis of findings

Outcome	Risk factor/Exposure	Effect Size	#studies, # participants	Reference
Supervisory communication Job-relevant communication: e.g. 'My supervisor gives clear instructions to me' (Kim, 2009) Positive relationship communication: e.g. 'My supervisor strikes up casual conversations with me' (Kim, 2009) Upward communication: e.g. 'I question my supervisor's instructions when I don't understand them' (Kim, 2009) Positive communication with employee: contact with employee at least once every two weeks during sick leave AND a follow-up meeting with employee after first return to work (Nieuwenhuijsen, 2004)				
Emotional exhaustion 1	Job-relevant communication	Statistically significant: r=-0.26 (p<0.05) £ *with benefit for more job-relevant communication*	1, 211 or 405 or 478 (unclear) †	Kim, 2009
	Positive relationship communication	Statistically significant: r=-0.31 (p<0.05) £ *with benefit for more positive relationship communication*		
	Upward communication	Not statistically significant: r=-0.11 (p>0.05) £		
Depersonalization	Job-relevant communication	Not statistically significant: r=-0.05 (p>0.05) £†		
	Positive relationship communication	Not statistically significant: r=-0.08 (p>0.05) £†		
	Upward communication	Not statistically significant: r=-0.03 (p>0.05) £†		
Time to full return to work	Positive vs negative communication with employee	Statistically significant: HR=1.7, 95%CI[1.0;2.8] (p=0.043) * *With benefit for positive communication with employee*	1, 55 vs 30 §	Nieuwen-huijsen, 2004
Time to partial return to work		Not statistically significant: HR=1.3, 95%CI[0.8;2.0] ¥ (p=0.26) *		
Talking as a coping strategy				
Emotional exhaustion	Talking it over with colleagues	Statistically significant: r=-0.11 (p<0.0001) £ *With benefit for talking it over with colleagues*	1, 1151	Lemaire, 2010
	Keeping stress to oneself	Statistically significant: r=0.23 (p<0.0001) £ *With harm for keeping stress to oneself*		
	Talking about stress with spouse	Statistically significant: r=-0.06 (p=0.001) £ *With benefit for talking about stress with spouse*		
High vs average vs low emotional exhaustion	Discussing work frustrations with spouse/partner/ family	Statistically significant: F=3.41, df=2,60 (p<0.05) £ *With benefit for discussing work frustrations with spouse/partner/family*	1, 63 §	Gupta, 2011

HR: hazard ratio, CI: confidence interval, r: correlation coefficient, df= degrees of freedom
* Calculations of p-values done by the reviewer(s) using online calculator.
£ No raw data available, effect size and CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Gupta, 2011	Yes (small sample size)	Yes (no information on how use of coping strategies was quantified)	Yes (incomplete data reporting: only F statistics, no means±SD; results for "discuss with spouse" only mentioned in discussion)	Yes (very low response rate, hence high risk of biased sample)	No
Kim, 2009	Yes (difference between 478 eligible questionnaires and subsample of 405 not clear)	Yes (difference between EE1 and EE2 not clear)	Yes (only useful results are crude correlation coefficients; incomplete reporting of regression models)	Yes (low response rate, hence high risk of biased sample)	Yes (no COI statement)
Lemaire, 2010	No	No	Yes (only crude correlation coefficients)	Yes (low response rate, hence high risk of biased sample)	No
Nieuwen-huijsen, 2004	Yes (small sample size)	No	No	No	No

Certainty of the body of evidence

1. Supervisory communication

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Lack of data or limited sample size or large variability in results
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

2. Talking as a coping strategy

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	Supervisory communication There is limited evidence with benefit for more frequent supervisory communication. It was shown that positive supervisory communication during and after an employee's sick leave resulted in a statistically significant decreased time to full return to work, compared to negative supervisory communication (Nieuwenhuijsen 2004). It was also shown that there is a statistically significant association between a decrease in emotional exhaustion and an increase in job-relevant communication, and between a decrease in emotional exhaustion and an increase in positive relationship communication. However, it was shown that there is no statistically significant association between a decrease in emotional exhaustion and an increase in upward communication, nor a statistically significant association between a decrease in depersonalization and an increase in job-relevant communication, positive relationship communication, or upward communication (Kim 2009). Evidence is of very low quality and results cannot be considered precise due to lack of data. No causal relationship can be inferred from the results in the study by Kim (2009). Talking as a coping strategy There is limited evidence with benefit for talking as a coping strategy and with harm for keeping stress to oneself. It was shown that there is a statistically significant association between a decrease in emotional exhaustion and an increase in talking it over with colleagues (Lemaire, 2010), and between a decrease in emotional exhaustion and an increase in talking about work stress/frustrations with partner or family (Lemaire 2010, Gupta 2011). Moreover, it was shown that there is a statistically significant association between an increase in emotional exhaustion and an increase in keeping stress to oneself (Lemaire 2010). Evidence is of very low quality. No causal relationship can be inferred from these results.
Reference(s)	**Articles** Gupta S, Paterson ML, Lysaght RM, von Zweck CM. *Experiences of burnout and coping strategies utilized by occupational therapists*. Can J Occup Ther. 2012, 79(2):86-95. Kim H, Lee SY. *Supervisory communication, burnout, and turnover intention among social workers in*

	health care settings. Soc Work Health Care. 2009, 48(4):364-385 Lemaire JB, Wallace JE. *Not all coping strategies are created equal: a mixed methods study exploring physicians' self-reported coping strategies*. BMC Health Serv Res. 2010, 10:208. Nieuwenhuijsen K, Verbeek JH, de Boer AG, Blonk RW, van Dijk FJ. *Supervisory behaviour as a predictor of return to work in employees absent from work due to mental health problems*. Occup Environ Med. 2004, 61(10):817-23.

1.5 Depression

Topic	Depression
Intervention	Communication
Question (PICO)	In people who are at high risk for/engage in depression (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing depression (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor/Exposure	Remarks
Brock, 2017, USA	Experimental: uncontrolled before-after study	60 depressed pregnant women or mothers of young children included at baseline: 21 in the intervention group and 39 in the control group (mean age 26.8 y, study arms pooled); 54 of these (18 in the intervention group and 36 controls) completed the trial.	Intervention: Usual care (see control group) plus listening visits (LV): 6 visits within 8 weeks (each session 30-50 min). LV consisted of 2 components: empathic listening and collaborative problem solving. LV providers were the usual point-of-care providers, who received a 14-hour training in LV. Data before the intervention were used as control data. [Data from the control group were not used, since women in the control group had received the Listening Visits (LV) intervention before serving as a control group (see Segre 2015). Hence, there would be potential for a carry-over effect. Therefore, this study was labeled as an uncontrolled before-after study]	Phase I of this RCT is reported by Segre (2015), with the same study population. Clinician rated depression severity was measured with the Hamilton Rating Scale for Depression (HRSD). Self-reported depressive symptoms were measured with the Edinburgh Postnatal Depression Scale (EPDS) and the Inventory of Depression and Anxiety Symptoms General Depression Scale (IDAS-GD). Depression diagnostic status was measured with the Structured Clinical Interview for DSM-IV, Non-Patient edition (SCID-I/NP). Quality of life was measured with the "General Activities" subscale of the Quality of Life, Enjoyment and Satisfaction Questionnaire (Q-LES-Q).
Dennis, 2009, Canada	Experimental: randomized controlled trial	701 mothers of newborns at high risk of postnatal depression included at baseline: 349 in the intervention group and 352 in the control group (mean ages unknown); 612 of these (297 in the intervention group and 315 controls) completed the trial.	Intervention: During 12 weeks postpartum, each mother was provided telephone-based peer (mother to mother) support by a volunteer, with a minimum of 4 contacts. Volunteers were given a 4-h training session to develop skills required to provide effective telephone-based support, and to make referrals to health professionals as necessary. Control group: Access to standard community postpartum care.	Obtained from the reference list of Bryan (2015). Postnatal depression symptoms were measured with the EPDS and diagnostic status was measured with the SCID, at baseline, after 12 weeks, and after 24 weeks.
Fite, 2014, USA	Observational: cohort study (prospective)	355 boys (age 16 y) at baseline, out of which 289 completed the trial (age 19 y). Approx. half of the study participants were from the upper 30% for proactive and reactive aggression of a larger cohort, the other half were from the lower 70%.	Relevant risk factors: • Poor self-reported parent-adolescent communication [data on peer rejection were not extracted]	Parent-adolescent communication was measured at age 16 with the Revised Parent-Adolescent Communication Form. Depression was measured with the depression subscale of the Youth Self Report (at age 16) and the Adult Self

				Report (at age 19).
Garrouste-Orgeas, 2016, France	Experimental: randomized controlled trial	86 family members of patients in the ICU (out of 100 included at baseline, one for each patient): 42 in the intervention group (15 male, 25 female, median age 61 y) and 44 in the control group (16 male, 27 female, median age 56 y).	Intervention: Family conferences according to standards set based on the RCT by Lautrette (2007), plus additional involvement of a nurse who provided specific information and an additional "sympathetic ear". Control group: Identical family conferences, except that all conferences were led by the physician in charge without assistance of a nurse.	Obtained from 20 most similar studies to Lautrette (2007). Depression was measured with the Hospital Anxiety and Depression Scale (HADS) after 90 days; depression subscale score >8 was considered to indicate clinically significant depression.
Kentish-Barnes, 2017, France	Experimental: randomized controlled trial	208 designated health care proxies (family members) of patients who died in the ICU (out of 242 included at baseline, one for each patient): 109 in the intervention group (35 male, 74 female, median age 57 y) and 99 in the control group (28 male, 71 female, median age 56 y).	Intervention: Within 3 days after the patient's death, the physician and nurse in charge handwrote a condolence letter according to specific guidelines, and sent it by standard mail 15 days after the patient's death to the family member involved in the study (healthcare proxy). Control group: Usual end-of-life care	Obtained from 20 most similar studies to Lautrette (2007). Depression was measured with the HADS after 1 month and after 6 months; depression subscale score >8 was considered to indicate clinically significant depression.
Lautrette, 2007, France	Experimental: randomized controlled trial	108 surrogate decision-makers (family members) of patients who died in the ICU (out of 126 included at baseline, one for each patient): 52 in the intervention group (12 male, 40 female, median age 54 y) and 56 in the control group (17 male, 39 female, median age 54 y).	Intervention: End-of-life conference (to inform the family that death was imminent) was conducted according to specific guidelines (VALUE objectives) and practical arrangements: planned several hours in advance; attended by physician in charge, other physicians, nurses, psychologists, other health professionals, unrestricted number of family members, and (optionally) a social worker and/or spiritual representative; always in a separate quiet room. In addition, at the end of the conference, the family member included in the study was handed a bereavement information leaflet. Control group: End-of-life conference was conducted routinely: not scheduled in advance; led by senior physician; nurse may or may not attend; at least one family member present; sometimes in a separate room.	See online supplement for details on methodology. Depression in the surrogate decision-maker was measured 90 days after the patient's death with the HADS; depression subscale score >8 was considered to indicate clinically significant depression.
Nagel, 1988, USA	Experimental: randomized controlled trial	60 moderately depressed elderly (16 male, 44 female, mean age 74 y) included at baseline: 20 in each intervention group and 20 in the control group; all participants completed the trial.	Intervention 1: During 5 weeks and 2 hours/week, volunteers engaged in various activities with the elderly person they were assigned to, and meanwhile, attempted to facilitate expression of emotional concerns by the elderly. These volunteers were given a 2-day	Obtained from the reference list of Bryan (2015). Depression was measured with the Zung Self-Rating Depression Scale (SDS), both before and after the 5-weeks intervention period.

			workshop focusing on 2 components: - education on various aspects of aging (special needs, effects of loss, dignity and potential of the elderly) - counselling and communication skills (accurate empathy) Intervention 2: During 5 weeks and 2 hours/week, volunteers engaged in various activities with the elderly person they were assigned to. Volunteers were given a 2-day educational workshop on aging only, without the empathy training part. Control group: Usual care in the nursing home.	
Roman, 1995, USA	Experimental: non-randomized controlled trial	58 mothers of preterm born infants, hospitalized at NICU, were included at baseline: 27 in the intervention group (mean age 26.8 y) and 31 in the control group (mean age 25.7 y); 42 of these (21 in the intervention group and 21 controls) completed the trial.	Intervention: From birth through the first 3-4 months after discharge from NICU, each mother was provided peer support by a volunteer through personal and telephone contact, with a cumulative average time of 34 h. Volunteers were given a 24-h training course on empathic communication skills, parenting strategies, coping, grief and loss, and reflection on own NICU experiences. Control group: Existing NICU support services.	Obtained from the reference list of Bryan (2015). Depression was measured with the depression-dejection subscale of the Profile of Mood States (POMS) at baseline, after 1 month, after 4 months and after 12 months of parent-to-parent support.
Segre, 2010, USA	Experimental: uncontrolled before-after study	19 depressed pregnant women or mothers of young children were included at baseline (mean age 27.6 y) and completed the study.	Intervention: Usual care (Healthy Start case management services) plus LV: up to 6 visits (each session approx. 1h). LV consisted of 2 components: empathic listening and collaborative problem solving. LV providers were the usual Healthy Start home visitors, who received a training workshop in LV. No control group. Data before the intervention were used as control data.	Pilot study for the subsequent RCT by Segre (2015) and Brock (2017). Clinician rated depression <u>severity</u> was measured with the HRSD. Self-reported depressive <u>symptoms</u> were measured with the EPDS and the Postpartum Depression Screening Scale (PDSS). Depression <u>diagnostic status</u> was measured with the SCID-I/NP. Quality of life was measured with the "General Activities" subscale of the Q-LES-Q.
Segre, 2015, USA	Experimental: randomized controlled trial	66 depressed pregnant women or mothers of young children included at baseline: 41 in the intervention group (mean age 27.4 y) and 25 in the control group (mean age	Intervention: Usual care (see control group) plus LV: 6 visits within 8 weeks (each session 30-50 min). LV consisted of 2 components: empathic listening and collaborative problem	Phase II of this RCT is reported by Brock (2017), with the same study population. Clinician rated depression <u>severity</u> was measured with

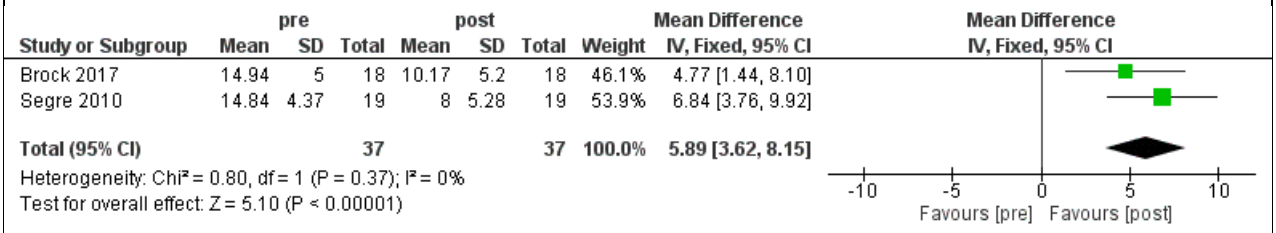
		24.6 y); 60 of these (39 in the intervention group and 21 controls) completed the trial.	solving. LV providers were the usual point-of-care providers, who received a 14-hour training in LV. Wait-list control group: Women in the control group received usual social or prenatal/ postpartum healthcare services, either at home or in the hospital. After finishing the RCT, the were offered the intervention (see Brock 2017).	the HRSD. Self-reported depressive symptoms were measured with the EPDS and the IDAS-GD. Depression diagnostic status was measured with the SCID-I/NP. Quality of life was measured with the "General Activities" subscale of the Q-LES-Q.
Teo, 2015, USA	Observational: cohort study (prospective)	11,065 participants >50 y (4,349 male, 6,716 female, median age in interval 60-69 y) at baseline, out of which 8,996 with complete data after 2 y follow-up	Relevant risk factors: • Frequency of: - In-person contact - Telephone contact - Written/e-mail contact With children, other family, friends. - A composite social contact variable	Depression was measured with the eight-item CES-D Scale (CES-D8) at baseline and at follow-up. CES-D8 score ≥4 indicated clinically significant depression. Fully adjusted models (model 3) were extracted for evaluation.
Wickberg, 1996, Sweden	Experimental: randomized controlled trial	41 women with postnatal depression (out of 48 included at baseline): 20 in the intervention group (mean age 27.2 y) and 21 in the control group (mean age 29.5 y).	Intervention: Routine care, plus 6 weekly 1-hour counselling sessions by a paediatric nurse, who had received 2 days of training. The focus was on listening instead of giving advice. Control group: Routine care, including the possibility of visiting the child health clinic whenever needed.	Obtained from the reference list of Brock (2017). Depression was measured before and after trial with the Montgomery-Åsberg Depression Rating Scale (MADRS). Clinical major depression was assessed according to DSM-III-R criteria.

Synthesis of findings

Outcome	**Comparison/Risk factor/Exposure**	**Effect Size**	**#studies, # participants**	**Reference**
Counselling by lay people A low-threshold communication intervention consisting of providing assistance and guidance in resolving mental health problems, by a lay person with minimal specific training.				
Depression in elderly (Zung SDS units decrease)	Counselling plus leisure activities vs leisure activities only	Not statistically significant: 5.80±4.73 vs 3.85±3.11 MD=1.95, 95%CI [-0.53;4.43] (p=0.12) *¥	1, 20 vs 20 §	Nagel, 1988
	Counselling plus leisure activities vs no intervention	Statistically significant: 5.80±4.73 vs 1.10±5.15 MD=4.70, 95%CI [1.64;7.76] (p=0.003) * *With benefit for counselling plus leisure activities*	1, 20 vs 20 §	
Postnatal clinical major depression	Counselling vs no counselling	Statistically significant: 3/15 vs 12/16 OR=0.08, 95%CI [0.02;0.45] (p=0.004) * *With benefit for counselling*	1, 15 vs 16 §	Wickberg, 1996
Postnatal depression (MADRS units decrease)		Statistically significant: 8.7 vs 2.4 MW U-test Z=-2.8 (p=0.0054) £ *With benefit for counselling*	1, 20 vs 21 §	
Listening Visits (LV) A non-directive counseling intervention, by a lay person with minimal specific training, consisting of exploring the client's problems through reflective listening and collaborative problem solving.				
Perinatal depression (HRSD units decrease)	LV vs no LV	Statistically significant: 7.36±6.94 vs 2.28±7.51 MD=5.08, 95%CI [1.20;8.96] (p=0.01) * *With benefit for LV*	1, 39 vs 21 §	Segre 2015

		Similar results were obtained with depression scales IDAS-GD and EPDS.		
Perinatal depression (HRSD reliable change)		Not statistically significant: 14/39 vs 3/21 OR=3.36, 95%CI [0.84;13.44] (p=0.09) * A similar result was obtained with depression scale EPDS.		
Perinatal depression (IDAS-GD reliable change)		Statistically significant: 27/39 vs 6/21 OR=5.63, 95%CI [1.75;18.05] (p=0.004)* *With benefit for LV*		
Perinatal depression (HRSD units decrease)	LV pre vs post	Meta-analysis (see Figure 1) Statistically significant: MD=5.89, 95%CI [3.62;8.15] (p<0.0001) * *With benefit for LV* Similar results were obtained with depression scales IDAS-GD and EPDS.	2, 37 §	Segre 2010, Brock 2017

Figure 1: Meta-analysis of Listening Visits as an uncontrolled before-after intervention for depression



Perinatal peer support The help and support that people with lived experience of a mental illness are able to give to one another, more specifically in the case of postnatal depression.				
Depression after NICU hospitalization (POMS units decrease)	Parent-to-parent support vs control	Not statistically significant: after 4 months: 3.75±8.25 vs 4.95±7.40 MD=-1.20, 95%CI [-5.94;3.54] (p=0.62) *¥ Similar results were obtained after 1 month of intervention and after 12 months of follow-up.	1, 21 vs 21 §	Roman, 1995
Postnatal depression (EPDS units decrease)	Mother-to-mother support vs control	Statistically significant: 4.57±3.38 vs 3.73±3.85 MD=0.84, 95%CI [0.27;1.41] (p=0.004) * *With benefit for mother-to-mother support*	1, 297 vs 315	Dennis, 2009
Postnatal depression (according to cut-off value)		Statistically significant: 40/297 vs 78/315 OR=0.47, 95%CI [0.31;0.72] (p<0.001) * *With benefit for mother-to-mother support.*		
Communication with family members				
Depression in adolescent boys	Parent-adolescent communication	Not statistically significant: β=0.05, 95%CI [-0.05;0.15] (p>0.05) *	1, 289 §	Fite, 2014
	Parent-adolescent communication x reactive aggression	Statistically significant: β=0.15, 95%CI [0.01;0.29] (p<0.05) * *with benefit for good communication in adolescents with higher reactive aggression*		
	Parent-adolescent communication x proactive aggression	Not statistically significant: β=0.06, 95%CI [-0.08;0.20] (p>0.05) *†		
Depression in elderly	Frequency of in-person contact with children: 1-2 times/month vs <1 time/month	Not statistically significant: OR=1.14, 95%CI [0.87-1.48] £†¥ (p=0.35) Similar results were obtained for telephone contact or written/e-mail contact.	1, 8996	Teo, 2015
	Frequency of in-person contact with children: 1-2	Not statistically significant: OR=0.85, 95%CI [0.64-1.12] £†¥ (p=0.63)		

	times/week vs <1 time/month	Similar results were obtained for telephone contact or written/e-mail contact.		
	Frequency of in-person contact with children: ≥3 times/week vs <1 time/month	Not statistically significant: OR=0.74, 95%CI [0.52-1.04] £†¥ (p=0.08) Similar results were obtained for telephone contact or written/e-mail contact.		
	Frequency of in-person contact with other family members: 1-2 times/month vs <1 time/month	Not statistically significant: OR=0.86, 95%CI [0.67-1.11] £†¥ (p=0.26) Similar results were obtained for telephone contact or written/e-mail contact.	1, 10055	
	Frequency of in-person contact with other family members: 1-2 times/week vs <1 time/month	Not statistically significant: OR=0.99, 95%CI [0.74-1.31] £†¥ (p=0.93) Similar results were obtained for telephone contact or written/e-mail contact.		
	Frequency of in-person contact with other family members: ≥3 times/week vs <1 time/month	Not statistically significant: OR=0.78, 95%CI [0.54-1.12] £†¥ (p=0.18) Similar results were obtained for telephone contact or written/e-mail contact.		
Communication with friends				
Depression in elderly	Frequency of in-person contact with friends: 1-2 times/month vs <1 time/month	Statistically significant: OR=0.77, 95%CI [0.60-1.00] £† (p=0.05) *With benefit for more frequent in-person contact with friends.*	1, 9907	Teo, 2015
	Frequency of in-person contact with friends: 1-2 times/week vs <1 time/month	Statistically significant: OR=0.57, 95%CI [0.44-0.76] £† (p<0.001) *With benefit for more frequent in-person contact with friends.*		
	Frequency of in-person contact with friends: ≥3 times/week vs <1 time/month	Statistically significant: OR=0.60, 95%CI [0.42-0.86] £† (p=0.005) *With benefit for more frequent in-person contact with friends.*		
	Frequency of telephone contact with friends: 1-2 times/month vs <1 time/month	Not statistically significant: OR=0.95, 95%CI [0.71-1.28] £†¥ (p=0.76) Similar results were obtained for written/e-mail contact.		
	Frequency of telephone contact with friends: 1-2 times/week vs <1 time/month	Not statistically significant: OR=0.80, 95%CI [0.60-1.07] £†¥ (p=0.14) Similar results were obtained for written/e-mail contact.		
	Frequency of telephone contact with friends: ≥3 times/week vs <1 time/month	Not statistically significant: OR=0.95, 95%CI [0.67-1.36] £†¥ (p=0.80) Similar results were obtained for written/e-mail contact.		
End-of-life conference for family of patients dying in the intensive care unit (ICU)				
Depression in bereaved family (HADS > 8)	End-of-life conference according to specific guidelines plus bereavement information leaflet vs routine end-of-life conference and no leaflet	Statistically significant: 16/56 vs 29/52 § OR=0.32, 95%CI [0.14;0.70] (p=0.005) * *With benefit for end-of-life conference according to specific guidelines plus bereavement information leaflet*	1, 56 vs 52	Lautrette, 2007
	End-of-life conference with physician and nurse vs end-of-life conference with physician only	Not statistically significant: 10/42 vs 17/44 § OR=0.50, 95%CI [0.20;1.26] (p=0.14) *	1, 42 vs 44	Garrouste-Orgeas, 2016
Condolence letter for family of patients who died in the intensive care unit (ICU)				
Depression in bereaved family (HADS > 8)	Condolence letter vs no condolence letter	Not statistically significant: 61/109 vs 42/99 § OR=1.72, 95%CI [1.00;2.99] ¥ (p=0.051) *	1, 109 vs 99	Kentish-Barnes, 2017

Mean ± SD (unless otherwise indicated), SD: standard deviation, MD: mean difference, CI: confidence interval, OR: odds ratio, MW: Mann-Whitney, β: parameter estimate in regression model

$ The outcome measures and effect measures represent the risk factor, not the outcome

* Calculations done by the reviewer using Review Manager software
£ No raw data available
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Experimental studies

Author, Year	Lack of randomization (LOR) or lack of allocation concealment (LOAC)	Lack of blinding (participants; personnel; outcome assessors)	Incomplete accounting of outcome events	Selective outcome reporting	Other limitations
Brock, 2017	Not applicable (no controls)	Not applicable (no controls)	No (no sign. diff. at baseline between drop-outs and completers)	No	Small sample size. No control group. SD of pre and post not given, hence 95%CI of MD not calculable; to be calculated from ANOVA p value.
Dennis, 2009	LOR: no LOAC: no (web-based randomization service)	Part.: yes (inevitable) Pers.: no (not informed of any mother's participation) Out. ass.: no (blinded to group allocation)	No (87% completed study, no baseline differences between completers and drop-outs)	No	SD of MD not given: were calculated from pre and post SD, implying estimation of intra-individual correlation.
Garrouste-Orgeas, 2016	LOR: no (generated via a computer) LOAC: no (use of sequentially numbered, opaque envelopes)	Part.: yes (inevitable) Pers.: unclear Out.ass.: unclear (no information in the paper)	Unclear (86% completed study; no information on character-istics)	No	Attempted sample size not reached; hence, power was insufficient. One co-author disclosed financial support by industry.
Kentish-Barnes, 2017	LOR: no (centralized internet-based procedure was used) LOAC: no (size of permutation blocks was concealed)	Part.: yes (inevitable) Pers.: unclear (no information in the paper) Out. ass.: no (blinded to study group)	Unclear (86% completed study; no information on character-istics)	No	Attempted sample size not reached; hence, power was insufficient. Incomplete data reporting: no SD, hence not possible to calculate MD with CI.
Lautrette, 2007	LOR: no LOAC: no (stratified randomization list was generated, sealed numbered envelopes were used)	Part.: yes (inevitable) Pers.: yes (inevitable) Out. ass.: no (blinded to group assignment)	Unclear (86% completed study; no information on character-istics)	No	One co-author disclosed financial support by industry.
Nagel, 1988	LOR: unclear LOAC: unclear (not specified in the paper)	Part.: partly (aware of changes, but not of study purpose) Pers.: unclear Out. ass.: yes (but self-report)	No (no drop-out)	No	Small sample size. No sample size or power calculation. No table with baseline patient characteristics.
Roman, 1995	LOR: yes (control group was enrolled in study before start of intervention) LOAC: n/a	Part.: yes (inevitable) Pers.: yes (inevitable) Out. ass.: yes (but self-report)	Yes (only 72% completed study, but no sign. diff. in characteristic between completers and drop-outs)	No	Small sample size. No sample size or power calculation. Power was insufficient.
Segre, 2010	Not applicable (no controls)	Not applicable (no controls)	No (no drop-out)	No	Small study, designed as a pilot study. No control group.
Segre, 2015	LOR: no LOAC: no (computer-generated randomization sequence)	Part.: yes (inevitable) Pers.: yes Out. ass.: no (blinded outcome assessment)	No (no sign. diff. at baseline between drop-outs and completers)	No	Unequal sample sizes. SD of MD not given: were calculated from pre and post SD, implying estimation of intra-individual correlation.

Wickberg, 1996	LOR: unclear LOAC: unclear (not specified in the paper)	Part.: yes (inevitable) Pers.: no Out. ass.: no	Unclear (15% drop-out; no information on characteristics)	No	Small sample size. No sample size or power calculation. Incomplete data reporting: no SD, hence not possible to calculate MD with CI.

Observational studies

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Fite, 2014	No (inclusion based on existing cohort and other clearly stated inclusion criteria)	Yes (self-reported questionnaires introduce risk of recall bias, although validity and internal consistencies were high)	No (relevant covariates were included in the multivariate model; however, outcome means by group not presented)	No (Drop-out rate 14%; however, some variables were sign. diff. between completers and drop-outs)	Unclear (COI not mentioned)
Teo, 2015	No (nationally representative cohort)	Yes (potential for recall bias in the self-reported exposure)	No (data reporting is complete)	Yes (Drop-out rate 34%; many variables were sign. diff. between completers and drop-outs)	No (covariates were included in multivariate models; no COI stated)

Certainty of the body of evidence

1. **Counselling by lay people**

	Initial grading High [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size, low number of events, and large variability of results
Inconsistency	0	
Indirectness	0	(or -1 if compared with control instead with 'activities only')
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Low [C]**	

2. **Listening visits**

	Initial grading High [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Moderate [B]**	

3. **Perinatal peer support**

	Initial grading High [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	

QUALITY (GRADE)	**Final grading Moderate [B]**	

4. Communication with family members

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Small sample size or large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very Low [D]**	

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5. Communication with friends

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very Low [D]**	

6. End-of-life conference for family of patients dying in the ICU

	Initial grading High [A]	Downgrading due to
Limitations of study design	0	See table 'Quality of evidence'
Imprecision	-1	Large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Moderate [B]**	

7. Condolence letter for family of patients who died in the ICU

	Initial grading High [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	+1	Almost significant in the opposite direction (argument for guideline against the intervention)
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Moderate [B]**	

Conclusion	<u>Counselling by lay people</u> There is limited evidence in favour of counselling by lay people. It was shown that counselling resulted in a statistically significant decrease of postnatal depression or depression in elderly, compared to no counselling (Wickberg 1996, Nagel 1988). However, a statistically significant decrease of depression in elderly using counselling and activities compared to activities only, could not be demonstrated (Nagel 1988). Evidence is of low quality and results cannot be considered precise due to limited sample size and low

number of events.

Note: Counselling is a low-threshold communication intervention consisting of providing assistance and guidance in resolving mental health problems, by a lay person with minimal specific training.

Listening visits (LV)

There is evidence in favour of LV.
It was shown that LV resulted in a statistically significant decrease of perinatal depression, compared to no LV (Brock 2017, Segre 2010, Segre 2015).
Evidence is of moderate quality.

Note: LV is a non-directive counseling intervention, that can be performed by a lay person with minimal specific training. It consists of exploring the patient's problems through reflective listening and collaborative problem solving.

Perinatal peer support

There is evidence in favour of perinatal peer support. In making this evidence conclusion, we place a higher value on the study by Dennis (2009) than on the study by Roman (1995) because of much higher quality of the former.
It was shown that peer support resulted in a statistically significant decrease of postnatal depression, compared to no peer support (Dennis 2009).
However, a statistically significant decrease of depression in parents with infants in NICU using peer support compared to no peer support, could not be demonstrated (Roman 1995).
Evidence is of moderate quality.

Note: Peer support is the help and support that people with lived experience of a mental illness and minimal specific training are able to give to one another, more specifically in the case of postnatal depression.

Communication with family members

There is limited evidence concerning the risk of depression in relation to communication with family members.
A statistically significant decreased risk of adolescent depression in presence of good parent-child communication could not be demonstrated (Fite 2014). However, it was shown that good parent-child communication resulted in a statistically significant decreased risk of depression in adolescents with higher reactive aggression (Fite 2014).
A statistically significant decreased risk of depression in elderly in presence of more frequent communication with their children or other family members, compared to <1 time/month, could not be demonstrated (Teo 2015).
Evidence is of very low quality and results of these studies are imprecise due to limited sample size or large variability of results.

Communication with friends

There is limited evidence with benefit for more frequent in-person communication with friends.
It was shown that 1-2 times/month or more frequent in-person communication with friends resulted in a statistically significant decrease risk of depression in elderly, compared to <1 time/month communication (Teo 2015). However, it was shown that more frequent telephone or written communication did not result in a statistically significant decreased risk of depression in elderly, compared to <1 time/month communication (Teo 2015).
Evidence is of very low quality and results cannot be considered precise due to lack of data.

End-of-life conference for family of patients dying in the ICU

There is evidence in favour of end-of-life conferences according to specific guidelines.
It was shown that end-of-life conferences according to specific guidelines resulted in a significant decrease of depression in bereaved family members, compared to routine end-of-life conferences (Lautrette 2007).
Evidence is of moderate quality.

However, concerning the addition of a nurse co-leading the structured end-of-life conferences, there is limited evidence neither in favour of the intervention nor the control (physician leading the structured end-of-life conference). A statistically significant decrease of depression in bereaved family members, using a nurse co-leading the end-of-life conferences, compared to a physician leading the end-of-life conferences, could not be demonstrated (Garrouste-Orgeas 2016).
Evidence is of moderate quality and results of this study are imprecise due to limited sample size, low number of events, and large variability of results.

	Note: The specific guidelines for the end-of-life conferences include: • VALUE objectives: to **v**alue what the family members said, to **a**cknowledge the family members' emotions, to **l**isten, to **u**nderstand who the patient was as a person, and to **e**licit questions from the family members. • Practicalities: planned several hours in advance; attended by physician in charge, other physicians, nurses, psychologists, other health professionals, unrestricted number of family members, and (optionally) a social worker and/or spiritual representative; always in a separate quiet room. • Providing a bereavement information leaflet. Condolence letter for family of patients who died in the ICU There is limited evidence neither in favour of the intervention nor the control. A statistically significant decrease of depression when writing a condolence letter to bereaved family of patients who died in the ICU, compared to not writing a condolence letter, could not be demonstrated (Kentish-Barnes 2017). Evidence is of moderate quality and results of this study are imprecise due to limited sample size, low number of events, and large variability of results.
Reference(s)	**Systematic reviews** Bryan AE, Arkowitz H. *Meta-analysis of the effects of peer-administered psychosocial interventions on symptoms of depression.* Am J Community Psychol. 2015, 55(3-4):455-71 **Articles** Brock RL, O'Hara MW, Segre LS. *Depression Treatment by Non-Mental-Health Providers: Incremental Evidence for the Effectiveness of Listening Visits.* Am J Community Psychol. 2017, 59(1-2):172-183. Dennis CL, Hodnett E, Kenton L, Weston J, Zupancic J, Stewart DE, Kiss A. *Effect of peer support on prevention of postnatal depression among high risk women: multisite randomised controlled trial.* BMJ 2009, 338:a3064. Fite PJ, Rubens SL, Preddy TM, Raine A, Pardini DA. *Reactive/proactive aggression and the development of internalizing problems in males: the moderating effect of parent and peer relationships.* Aggress Behav. 2014, 40(1):69-78. Garrouste-Orgeas M, Max A, Lerin T, Grégoire C, Ruckly S, Kloeckner M, Brochon S, Pichot E, Simons C, El-Mhadri M, Bruel C, Philippart F, Fournier J, Tiercelet K, Timsit JF, Misset B. *Impact of Proactive Nurse Participation in ICU Family Conferences: A Mixed-Method Study.* Crit Care Med. 2016, 44(6):1116-1128. Kentish-Barnes N, Chevret S, Champigneulle B, Thirion M, Souppart V, Gilbert M, Lesieur O, Renault A, Garrouste-Orgeas M, Argaud L, Venot M, Demoule A, Guisset O, Vinatier I, Troché G, Massot J, Jaber S, Bornstain C, Gaday V, Robert R, Rigaud JP, Cinotti R, Adda M, Thomas F, Calvet L, Galon M, Cohen-Solal Z, Cariou A, Azoulay E. *Effect of a condolence letter on grief symptoms among relatives of patients who died in the ICU: a randomized clinical trial.* Intensive Care Med. 2017, 43(4):473-484. Lautrette A, Darmon M, Megarbane B, Joly LM, Chevret S, Adrie C, Barnoud D, Bleichner G, Bruel C, Choukroun G, Curtis JR, Fieux F, Galliot R, Garrouste-Orgeas M, Georges H, Goldgran-Toledano D, Jourdain M, Loubert G, Reignier J, Saidi F, Souweine B, Vincent F, Barnes NK, Pochard F, Schlemmer B, Azoulay E. *A communication strategy and brochure for relatives of patients dying in the ICU.* N Engl J Med. 2007, 356(5):469-478. Nagel J, Cimbolic P, Newlin M. *Efficacy of elderly and adolescent volunteer counselors in a nursing home setting.* Journal of Counseling Psychology 1988, 35(1):81-86. Roman LA, Lindsay JK, Boger RP, DeWys M, Beaumont EJ, Jones AS, Haas B. *Parent-to-parent support initiated in the neonatal intensive care unit.* Res Nurs Health. 1995, 18(5):385-394. Segre LS, Stasik SM, O'Hara MW, Arndt S. *Listening visits: an evaluation of the effectiveness and acceptability of a home-based depression treatment.* Psychother Res. 2010, 20(6):712-21. Segre LS, Brock RL, O'Hara MW. *Depression treatment for impoverished mothers by point-of-care providers: A randomized controlled trial*. J Consult Clin Psychol 2015, 83(2):314-324. Teo AR, Choi H, Andrea SB, Valenstein M, Newsom JT, Dobscha SK, Zivin K. *Does Mode of Contact with Different Types of Social Relationships Predict Depression in Older Adults? Evidence from a Nationally Representative Survey*. J Am Geriatr Soc. 2015, 63(10):2014-2022. Wickberg B, Hwang CP. *Counselling of postnatal depression: a controlled study on a population based Swedish sample*. J Affect Disord. 1996, 39(3):209-216.

1.6 Eating disorder

Topic	Eating disorder
Intervention	Communication
Question (PICO)	In people who have an eating disorder (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing eating disorder complaints (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor	Remarks
Cunha, 2009	Observational: Case-control study	Nr of participants: 68 people: - 68 female - 0 male Two cohorts: - Eating disorder (n=34) - No eating disorder (n=34) Within the eating disorder cohort, 28 were classified into restricting anorexia subtype and 6 into binge-eating/purging anorexia subtype. Mean age (SD) eating disorder cohort = 17.26 (2.71) years Mean age (SD) control cohort = 17.18 (2.77) years	Relevant risk factor: - Communication, measured as a subscale from the Inventory of Parent and Peer Attachment (IPPA)	Identified from reference list from Pelletier Brochu 2018 The survey included demographics Eating disorders were assessed by DSM-IV
Di Paola, 2010	Observational: Case-control study	Nr of participants: 126 people: - 126 female - 0 male Two cohorts: - Eating disorder (n=63) - No eating disorder (n=63) • Within the eating disorder cohort, 20 were classified into anorexia, 20 into bulimia, and 23 into binge-eating disorder. Mean age (SD) eating disorder cohort = 35.6 (8.2) years Mean age (SD) no eating disorder cohort = 34.7 (15.6) years	Relevant risk factor: - Level of expressed emotion – total score LEE measures critical and/or emotionally overinvolved attitudes	Identified from similar studies in PubMed from Pelletier Brochu 2018 The survey included demographics Eating disorders were assessed by DSM-IV + EDE-Q + BES
Emanuelli, 2004	Observational: Case-control study	Nr of participants: 83 families involving 83 mothers, 83 fathers, and 83 daughters Two cohorts: - Anorexia (n=34) - No eating disorder (n=49)	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	The survey included demographics Eating disorders were assessed by DSM-IV

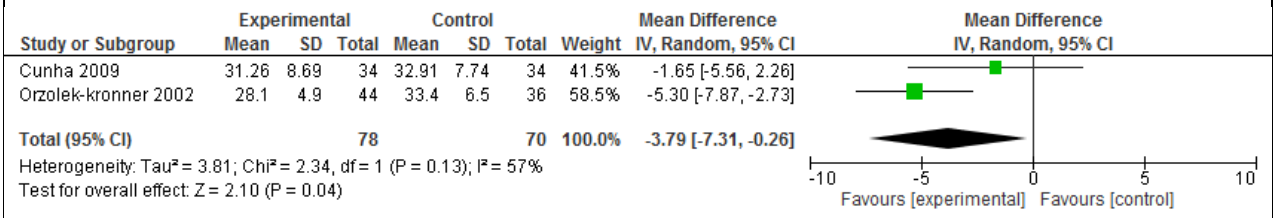
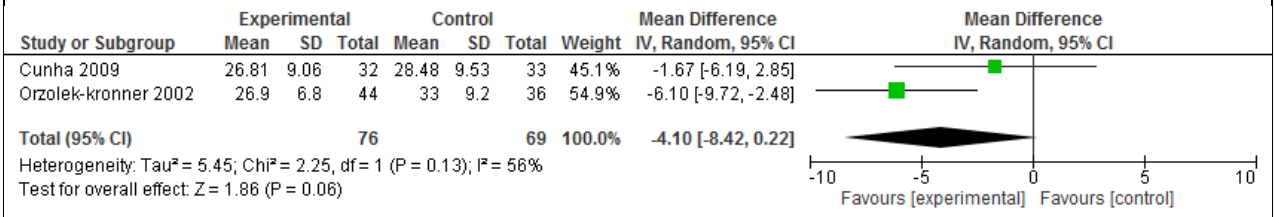
		Mean age (SD) anorexia cohort = 15.7 (1.71) years Mean age (SD) no eating disorder cohort = 14.5 (1.47) years		
Friedmann, 1997	Observational: Case-control study	Nr of participants: 378 families, including 851 individuals - gender not available Two relevant cohorts: - Eating disorder (n=26 families; 84 individuals) - No eating disorder (n=353 families; 767 individuals) Mean age (SD) eating disorder cohort =20.9 (5.4) years Mean age (SD) no eating disorder cohort is not available	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from reference list from Emanuelli 2004 The survey included demographics Eating disorders were assessed by DSM-III
Garfinkel, 1983	Observational: Case-control study	Nr of participants: 35 people - 35 female - 0 male Two cohorts= - Anorexia (n=23) - No eating disorder (n=12) Within the anorexia cohort, 9 were classified into restricting subtype and 14 into bulimic subtype. Mean age (SD) anorexia cohort = 18.5 (3.2) years Mean age (SD) no eating disorder cohort = 16.4 (2.2) years	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Measure (FAM)	Identified from reference list from Friedmann 1997 The survey included demographics Eating disorders were assessed by EAT
Gowers, 1999	Observational: Cross-sectional study	Nr of participants: 35 people - 31 female - 4 male Mean age = 14.9 years All participants had a diagnosis of anorexia	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from similar studies in PubMed from Emanuelli 2004 The survey included demographics Eating disorders were assessed by DSM-III-R
Laghi, 2017	Observational: Case-control study	Nr of participants: 72 people - 72 female - 0 male Two cohorts: - Anorexia (n=36) - No eating disorder (n=36) Mean age (SD) anorexia	Relevant risk factor: - Family communication	Identified from similar studies in PubMed from Emanuelli 2004 The survey included demographics Eating disorders were assessed by DSM-IV-TR + EAT-26

		cohort = 14.8 (1.45) years Mean age (SD) no eating disorder cohort is not available, but controls were matched for age and education		
North, 1995	Observational: Case-control study	Nr of participants: 70 people - 62 female - 8 male Two relevant cohorts: - Anorexia (n=35) - No eating disorder (n=35) Mean age (SD) anorexia cohort = 14.9 (1.7) years Mean age (SD) no eating disorder cohort = 15.4 (1.7) years	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from reference list from Emanuelli 2004 The survey included demographics Eating disorders were assessed by DSM-III-R
Orzolek-kronner, 2002	Observational: Case-control study	Nr of participants: 80 people: - gender not available Mean age (SD) = 16.5 (2.3) years Two relevant cohorts: - Eating disorder (n=44) - No eating disorder (n=36) Within the eating disorder cohort, 20 were diagnosed with anorexia, 13 with bulimia, and 11 with symptoms of both anorexia and bulimia.	Relevant risk factor: - Communication, measured as a subscale from the Inventory of Parent and Peer Attachment (IPPA)	Identified from reference list from Pelletier Brochu 2018 The survey included demographics Eating disorders were assessed by DSM-IV
Pelletier Brochu, 2018	Observational: Cross-sectional study	Nr of participants: 186 people: - 186 female - 0 male All participants had a diagnosis of anorexia. Mean age (SD) = 15.36 (1.38) years	Relevant risk factor: - Communication, measured as a subscale from the Inventory of Parent and Peer Attachment (IPPA)	The survey included demographics Eating disorders were assessed by DSM-IV-TR + EDI-3
Schutz, 2007	Observational: Cross-sectional study	Nr of participants: 327 people - 327 female - 0 male Mean age (SD) = 15.9 (0.51) years Description of the cohort: - No bulimic symptoms (n=197) - Low bulimic symptoms (n=61) - High bulimic symptoms (n=69)	Relevant risk factor: - Communication, measured as a subscale from the Inventory of Parent and Peer Attachment (IPPA)	Identified from reference list from Pelletier Brochu 2018 The survey included demographics Eating disorders were assessed by EDI-B
Sharpe, 2014	Observational: Cross-sectional study	Nr of participants: 216 people	Relevant risk factor: - Communication, measured	identified from similar studies in PubMed from

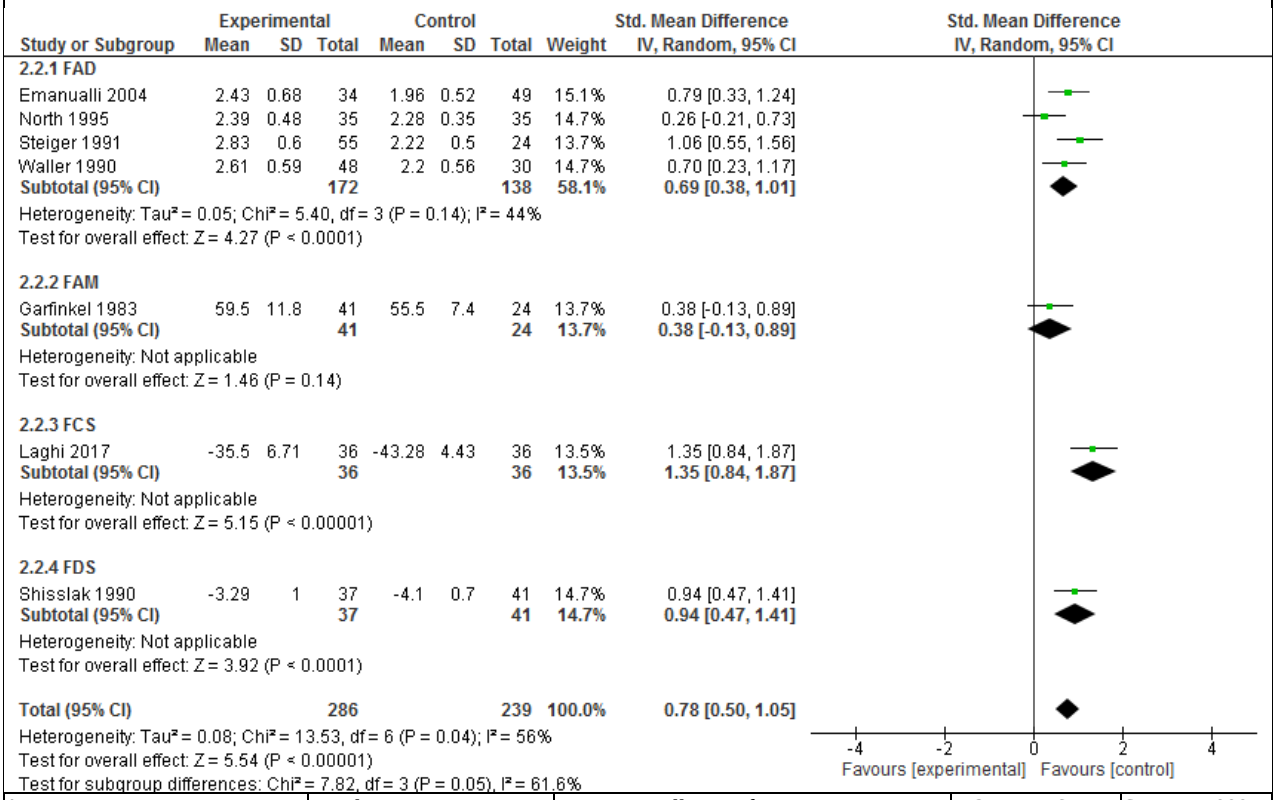
		- 216 female - 0 male Mean age (SD) = 13.57 (0.63) years No other demographics are available	as a subscale from the Inventory of Parent and Peer Attachment (IPPA)	Schutz 2007 The survey included demographics Eating disorders were assessed by EDE-Q
Shisslak, 1990	Observational: Case-control study	Nr of participants: 78 people: - gender not available Three cohorts: - Normal weight bulimics (n=24) - Bulimic anorexics (n=13) - No eating disorder (n=41) Mean age normal weight bulimics = 20.8 years Mean age bulimic anorexics = 21.2 years Mean age no eating disorder = 20.9 years [Normal weight bulimics and bulimic anorexics were combined for data extraction]	Relevant risk factor: - Quality of communication, measured as a subscale from the Family dynamics Survey	Identified from reference list from Friedmann 1997 The survey included demographics Eating disorders were assessed by DSM-III-R + EAT-26
Steiger, 1991	Observational: Case-control study	Nr of participants: 93 people - gender not available Two cohorts: - Anorexia restricters (n=22) - Anorexia binge (n=12) - Bulimia + history of anorexia (n=14) - Bulimia no history of anorexia (n=20) - No eating disorder (n=25) Mean age (SD) anorexia restricter = 29.59 (7.24) years Mean age (SD) anorexia binge = 29.83 (6.91) years Mean age (SD) bulimia + history of anorexia = 27.64 (6.87) years Mean age (SD) bulimia no history of anorexia = 27.4 (5.83) years Mean age (SD) no eating disorder = 24.28 (2.56) years	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from reference list from Friedmann 1997 The survey included demographics Eating disorders were assessed by DSM-III-R + EAT-26

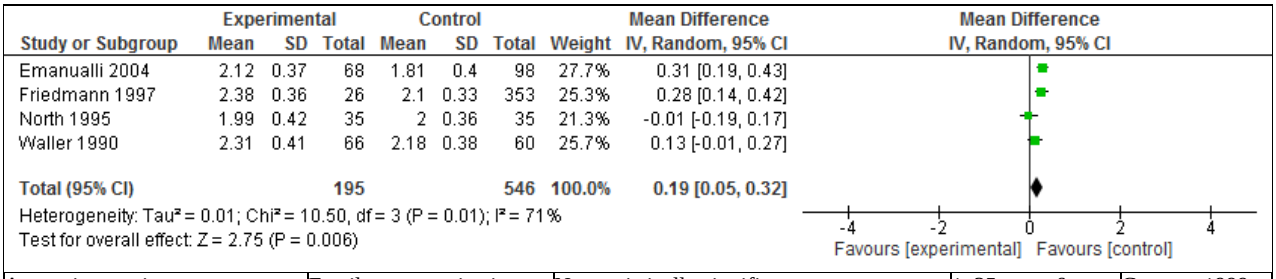
		[Anorexia restricters, anorexia binge, bulimia + history of anorexia, and bulimia no history of anorexia were combined for data extraction]		
Waller, 1989	Observational: Case-control study	Nr of participants: 68 people - gender not available Four cohorts: - Anorexia nervosa (n=12) - Bulimia nervosa (n=21) - Bulimia simplex (n=8) - No eating disorder (n=27) Mean age anorexia nervosa = 25.3 years Mean age bulimia nervosa = 23.5 years Mean age bulimia simplex = 27.1 years Mean age no eating disorder = 25.9 years	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from reference list from Emanuelli 2004 The survey included demographics Unclear how eating disorders were assessed.
Waller, 1990	Observational: Case-control study	Nr of participants: 78 people - gender not available Three cohorts: - Anorexia nervosa (n=14) - Bulimia nervosa (n=34) - No eating disorder (n=30) Mean age (SD) anorexia nervosa = 26.3 (6.46) years Mean age (SD) bulimia nervosa = 25.1 (7.90) years Mean age (SD) no eating disorder = 26.3 (8.25) years [Anorexia nervosa and bulimia nervosa were combined for data extraction]	Relevant risk factor: - Communication, measured as a subscale from the Family Assessment Device (FAD)	Identified from reference list from Emanuelli 2004 The survey included demographics Eating disorders were assessed by DSM-III-R

Synthesis of findings

Outcome	Comparison/Risk factor	Effect Size	#studies, # participants	Reference
IPPA – communication with mother				
Anorexia	Communication with mother	Meta-analysis 1 <u>Statistically significant:</u> MD: -3.79, 95%CI [-7.31;-0.26] $ (p=0.04)* *With benefit from good communication with mother*	2, 148 (78 cases vs 70 controls) §	Cunha, 2009 Orzolek-kronner, 2002
Meta-analysis 1: Communication with mother  				
Anorexia severity	Communication with mother	Not statistically significant: Multiple regression: B=0.03, SE B=0.17 £ (p>0.05)	1, 186 §	Pelletier Brochu, 2018
IPPA – communication with father				
Anorexia	Communication with father	Meta-analysis 2 Not statistically significant: MD: -4.10, 95%CI [-8.42;0.22] ¥$ (p=0.06)*	2, 145 (76 cases vs 69 controls) §	Cunha, 2009 Orzolek-kronner, 2002
Meta-analysis 2: Communication with father  				
Anorexia severity	Communication with father	Not statistically significant: Multiple regression: B=0.11, SE B=0.17 £ (p>0.05)	1, 186 §	Pelletier Brochu, 2018
IPPA – communication with peers				
Anorexia	Communication with peers	<u>Statistically significant:</u> 29.67 ± 7.19 vs 34.09 ± 4.42 MD: -4.42, 95%CI [-7.29;-1.55] $ (p=0.004)* *With benefit from communication with peers*	1, 67 (33 cases vs 34 controls) §	Cunha, 2009
Anorexia severity	Communication with peers	Not statistically significant: Multiple regression: B=-0.01, SE B=0.21 (p>0.05)	1, 186 §	Pelletier Brochu, 2018
Bulimic symptoms	Communication with peers	Not statistically significant: Adjusted correlation coefficient: 0.06 £ (p>0.05)	1, 327 §	Schutz, 2007
Eating pathology	Communication with peers	Not statistically significant: Multiple regression: β=-0.03, t= -0.44, R^2=0.001, F= 0.19 £ (p>0.05)	1, 216 §	Sharpe, 2014
Family communication – patient perspective				
Eating disorder	Family communication – patient perspective	Meta-analysis 2 <u>Statistically significant:</u>	7, 525 (286 cases vs 239 controls)	Emanuelli, 2004 North, 1995 Steiger, 1991

		MD: 0.78, 95%CI [0.50;1.05] $ (p<0.00001)* *With benefit from good family communication*		Garfinkel, 1983 Laghi, 2017 Shisslak, 1990 Waller, 1990
Meta-analysis 3: Family functioning from the perspective of the patient				
Anorexia severity	Family communication – patient perspective	Not statistically significant: Correlation coefficient: 0.09 £ (p>0.05)	1, 35 cases §	Gowers, 1999
Anorexia nervosa	Family communication – patient perspective	Not statistically significant: 2.58 vs 2.25 £†$ MD: 0.33* (p>0.05)	1, 39 (12 cases vs 27 controls) §	Waller, 1989
Bulimia nervosa	Family communication – patient perspective	Not statistically significant: 2.39 vs 2.25 £†$ MD: 0.14* (p>0.05)	1, 48 (21 cases vs 27 controls) §	Waller, 1989
Bulimia Simplex	Family communication – patient perspective	Statistically significant: 3.08 vs 2.25 £†$ MD: 0.83* (p<0.05) *With benefit from good family communication*	1, 35 (8 cases vs 27 controls) §	Waller, 1989
Family communication – parent perspective				
Eating disorder	Family communication – parents perspective	Meta-analysis 4 Statistically significant: MD: 0.19, 95%CI [0.05;0.32] $ (p=0.006)* *With benefit from good family communication*	4, 741 (195 parents of cases vs 546 parents of controls)	Emanuelli, 2004 Friedmann, 1997 North, 1995 Waller, 1990
Meta-analysis 4: Family functioning from a perspective of the parents				





Anorexia severity	Family communication – parents perspective	Not statistically significant: Correlation coefficient: 0.17 £ (p>0.05)	1, 35 cases §	Gowers, 1999
Eating disorder	E Family communication – % families with unhealthy communication	Statistically significant: 17/26 vs 140/353 § RR: 1.65, 95%CI [1.21;2.24]* (p<0.05) *With harm from unhealthy family communication*	1, 379 (26 cases vs 353 controls)	Friedmann, 1997
Level of expressed emotion				
Eating disorder	Level of Expressed Emotion - total	Statistically significant: 24.98 ± 13.90 vs 6.65 ± 3.65 MD: 18.33, 95%CI [14.78;21.88] $ (p<0.05)* *With harm from high expressing emotion*	1, 126 (63 cases vs 63 controls) §	Di Paola, 2010

MD: mean difference; SD: standard deviation; RR: Risk Ratio; SE: Standard error; B: Regression coefficient; t: test statistic; R^2: correlation coefficient squared
* Calculations done by the reviewer(s) using Review Manager software
$ The outcome measures (means) and effect measures (mean differences) represent the risk factor, not the outcome "eating disorder"
£ No raw data available, effect size and CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Cunha, 2009	No, cases and controls were matched for age and gender. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Di Paola, 2010	No, cases and controls were matched for age and gender. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Emanualli, 2004	Yes, cases and controls were not matched for age. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Friedmann, 1997	Unclear which eating disorders were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Garfinkel, 1983	Yes, cases and controls were not matched for age. Of note: only females	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/

	were included.				
Gowers, 1999	No.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Laghi, 2017	No, cases and controls were matched for age, gender and education. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
North, 1995	No, cases and controls were matched for age and gender.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Orzolek-kronner, 2002	Unclear, gender and detailed age information not available.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Pelletier Brochu, 2018	No. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Schutz, 2007	No. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	No, controlled for depression.	Not applicable. (cross-sectional)	/
Sharpe, 2014	Unclear. Of note: only females were included.	Yes, cross-sectional study design with questionnaires	No, controlled for depression.	Not applicable. (cross-sectional)	/
Shisslak, 1990	Unclear, gender information not available.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Steiger, 1991	Unclear, gender information not available.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/
Waller, 1989	Unclear, gender information not available.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	SD not available.
Waller, 1990	Unclear, gender information not available.	Yes, cross-sectional study design with questionnaires	Yes, not controlled for confounding	Not applicable. (cross-sectional)	/

Certainty of the body of evidence

1. Communication with mother

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size
Inconsistency	-1	I^2=57%
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

2. Communication with father

	Initial grading Low [C]	**Downgrading due to**
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size and large variability of results
Inconsistency	-1	I^2=56%
Indirectness	0	

Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

3. Communication with peers

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

4. Family communication – patient perspective

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	-1	I^2=61.6%
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

5. Family communication – parent perspective

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	-1	I^2=71%
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

6. Level of expressed emotion

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	<u>Communication with mother</u> There is limited evidence with benefit for good communication with mother. In making this evidence conclusion, we place a higher value on the case-control study over the cross-sectional studies. It was shown in two case-control studies that good communication with mother resulted in a statistically significant decreased risk of eating disorders, compared to bad communication with mother (Cunha 2009, Orzolek-

	Kronner 2002). However, a statistically significant association between communication with mother and eating disorders in one cross-sectional study could not be demonstrated (Pelletier Brochu 2018). Evidence is of very low quality and results cannot be considered precise due to limited sample size. Communication with father There is limited evidence concerning the risk of eating disorders in case of good communication with father compared to bad communication with father. A statistically significant decreased risk of eating disorders in case of good communication with father compared to bad communication with father could not be demonstrated (Cunha 2009, Orzolek-Kronner 2002, Pelletier Brochu 2018). Evidence is of very low quality and results of these studies are imprecise due to limited sample size and large variability of results. Communication with peers There is limited evidence with benefit for good communication with peers. In making this evidence conclusion, we place a higher value on the case-control study over the cross-sectional studies. It was shown that good communication with peers resulted in a statistically significant decreased risk of eating disorders, compared to bad communication with peers (Cunha 2009). However, a statistically significant association between a decrease in eating disorders and good communication with peers compared to bad communication with peers could not be demonstrated in the cross-sectional studies (Pelletier Brochu 2018, Schutz 2007, Sharpe 2014). Evidence is of very low quality and results of these studies are imprecise due to limited sample size. Family communication – patient perspective There is limited evidence with benefit for good family communication. It was shown that good family communication resulted in a statistically significant decreased risk of eating disorders, compared to bad family communication (Emanuelli 2004, North 1995, Steiger 1991, Garfinkel 1983, Laghi 2017, Shisslak 1990, Waller 1990). However, a statistically significant association between a decrease in eating disorders and good family communication could not be demonstrated in one cross-sectional study (Gowers 1999). Another case-control study could not demonstrate a significant decrease in anorexia nervosa or bulimia nervosa in case of good family communication compared to bad family communication, but did find a statistically significant decreased risk of bulimia simplex in case of good family communication (Waller 1989). Evidence is of very low quality. Family communication – parent perspective There is limited evidence with benefit for good family communication. In making this evidence conclusion, we place a higher value on the case-control study over the cross-sectional studies. It was shown that good family communication resulted in a statistically significant decreased risk of eating disorders, compared to bad family communication (Emanuelli 2004, Friedmann 1997, North 1995, Waller 1990). However, a statistically significant association between a decrease in eating disorders and good family communication could not be demonstrated in one cross-sectional study (Gowers 1999). Evidence is of very low quality. Level of expressed emotion There is limited evidence with harm of expressing emotion, i.e. critical and/or emotionally overinvolved attitudes. It was shown that expressing emotion resulted in a statistically significant increased risk of eating disorders, compared to low expression of emotions. Evidence is of very low quality due to limited sample size.
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1.7 Grief

Topic	Grief
Intervention	Communication
Question (PICO)	In bereaved/grieving people (P), is communication with family, friends, or somebody else (I) effective for improving mental health (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor/Exposure	Remarks
Davis, 2016, Australia	Observational: cross-sectional study	97 bereaved university students (25 male, 71 female, mean age 24.9 y) who experienced the death of a close family member or friend within the past 2 years	Risk factor: Communication avoidance, measured with the Expressiveness subscale of the Family Relationship Index (FRI) [Acceptance, valued-living, and death attitudes were not extracted]	Obtained from 20 most similar articles to Liew (2018) Grief intensity and the diagnosis of Prolonged Grief Disorder (PGD) were measured with the PG-13.
Kamm, 2001, USA	Observational: cross-sectional study	36 man-wife couples (mean age 47 y) who experienced the death of a minor child (mean time since child's death 4 y 10 m), out of 68 couples who were invited to participate (response rate 53%)	Risk factor: Grief communication, measured with the Attitudes towards Emotional Expression Scale (AEES)	Grief was measured with the Revised Grief Experience Inventory (RGEI). [The outcome "marital satisfaction" was not extracted]
Liew, 2018, USA	Observational: cross-sectional study	335 college students (120 male, 214 female, mean age 20.9 y) who had experienced one or more death losses in the past 2 years (mean 14 months)	Risk factor: Openness of family communication about grief, measured with the Family Communication about Grief Differences Scale (FCGDS)	Intensity of grief was measured with the Core Bereavement Items (CBI). [The outcome "family satisfaction" was not extracted]
Lövgren, 2018, Sweden	Observational: cross-sectional study	174 bereaved siblings (73 male, 101 female, median age 24 y) of children who died from cancer (mean time since death 6 y), out of 240 who were invited to participate (response rate 73%)	Risk factor: Communication following the loss, in particular: - Talking to anyone about the sibling's death - Avoiding talking to parents about deceased sibling - Satisfaction with amount of talking to family about feelings - Satisfaction with amount of talking to people outside the family about feelings [communication near the end of sibling's life was not extracted]	Obtained from systematic review by Hoffman (2018) Grief was measured with one question: "Do you think you have worked through your grief over your sibling's death?" with a 4-point Likert scale. 26 participants were "too young" to answer this question and were not included in the regression analysis (N=148). Same population as Wallin (2016), but different outcome.
Raveis, 1999, USA	Observational: cross-sectional study	83 children (43 male, 40 female, mean age 11.9 y) who recently lost a parent to cancer (mean time since death 10.5 months)	Risk factor: A composite communication variable that was obtained by summing the scores of 4 items on communication between the child and the surviving parent	Obtained from systematic review by Hoffman (2018) Child depression was measured with the Children's Depression Inventory (CDI). Child anxiety was measured with the State-Traite Anxiety Inventory for Youths (STAIY, when ≥ 12 y) or the

				State-Traite Anxiety Inventory for Children (STAIC, when < 12 y)
Rich, 2000, USA	Observational: cross-sectional study	363 adults (>18 y) who experienced one or more pregnancy losses (114 male, 249 female, mean age 32.3 y), out of 540 people who were sent the questionnaire (response rate 67%)	Relevant risk factors: - Talking with family - Talking with friends [Grief support group and counseling were not extracted, as they did not meet the inclusion criteria]	Grief was measured with the Perinatal Grief Scale (PGS). Results were extracted from table 8 ("service predictors for fathers"). Non-significant predictor variables were not listed.
Schreiner, 1979, USA	Experimental study: non-randomized controlled trial	27 couples of parents of infants who died in the neonatal intensive care unit (NICU): 18 in the experimental group and 11 in the control group	Intervention: Parents were called by telephone by the neonatologist 3-19 days (mean 9 days) after neonatal death, to discuss several aspects of bereavement, according to the protocol described in the paper. Control: No phone call	Obtained from systematic review by Harvey (2008) Bereavement outcomes were assessed at an interview 8-27 weeks after neonatal death. Each outcome consisted of one single question. Data for loneliness/depression, guilt feelings and anger/hostility were extracted. [Other outcomes were not extracted]
Shapiro, 2014, USA	Observational: cross-sectional study	38 bereaved children (18 male, 20 female, mean age 7.8 y), from 26 families (out of 40 invited to participate, response rate 65%), who lost their father within the past 6 months (mean time since loss 100 days)	Exposure: A 10-minute communication task in which the child and its caregiver discussed two standardized "positive reminiscing" prompts. During the task, 5 variables on mother communality were assessed and merged into a single composite variable by principal component analysis. [Likewise, a child communality variable was constructed, but not extracted from the paper]	Obtained from reference list from Wardecker (2017) Child grief was measured with the Inventory of Complicated Grief-Revised (ICG-R). Child depression was measured using the Short Mood and Feelings Questionnaire (SMFQ). Children <7 y (N=15) were excluded from analyses, since ICG-R and SMFQ had not been validated under the age of 7.
Stroebe, 2002, Netherlands	Observational: cross-sectional study	128 recently (3 months) widowed individuals (23 male, 105 female, age <66 y) who completed the study, out of 281 who started the study (drop-out rate 54%) and 545 who were invited to participate (response rate 52%)	Relevant risk factor: Disclosure of emotion, measured with a newly constructed five-item scale	Psychological health was measured with the General Health Questionnaire (GHQ-28). In the Results section, the outcome is called "distress". The study had a prospective design, but no longitudinal associations between risk factor and outcome were reported, only cross-sectional associations at four time points. The second study described in the paper was not extracted, since the intervention (writing) does not imply a role for a first aider.
Stroebe, 2013, Netherlands	Observational: prospective cohort study	219 parent couples who recently lost a child (mean age 42.2 y), out of 463 couples invited to participate (response	Relevant risk factors: - Current and past partner-oriented self-regulation (POSR)	Grief was measured with the ICG. Data were extracted from

		rate 47%)	- Current and past concern for the partner Both were assessed as risk factors for own and partner's grief, 6, 13 and 20 months post-bereavement.	model 2: current (cross-sectional) + 7-months lagged (longitudinal) associations. POSR is defined as avoiding talking about the loss and trying to remain strong in each other's presence.
Traylor, 2003, USA	Observational: prospective cohort study	66 recently bereaved people (22 male, 44 female, mean age 46.8 y), out of which 61 completed the study. 54 (82%) reported the loss of a parent, 12 (18%) reported the loss of a partner/spouse	Risk factor: Communication at time 1 (4-5 w after death), measured with the Dyadic subscale of the Family Assessment Measure – Third Edition (FAM-III)	Obtained from reference list from Liew (2018) Grief was measured with the GEI. Grief at time 2 (6 months post-bereavement) was taken as the outcome variable.
Wallin, 2016, Sweden	Observational: cross-sectional study	174 bereaved siblings (73 male, 101 female, median age 23 y) of children who died from cancer, out of 240 who were invited to participate (response rate 73%)	Risk factor: Communication following the loss, in particular: - Avoiding talking to parents about deceased sibling - Sharing feelings about sibling's death with family - Satisfaction with amount of talking to family about feelings [communication near the end of sibling's life was not extracted]	Anxiety was defined as a score ≥11 on the HADS. Same population as Lövgren (2018), but different outcome
Wardecker, 2017, USA	Observational: cross-sectional study	39 bereaved children (21 male, 18 female, mean age 9.3 y), who lost a parent at 29 to 208 days (median 106 days) before the study, and their surviving caregiver (9 male, 30 female, mean age 40.9 y)	Exposure: A 10-minute communication task in which the child and its caregiver discussed two standardized "positive reminiscing" prompts. The caregivers' use of positive emotion words was quantified with the Linguistic inquiry and Word Count Program (LIWC).	Anxiety was measured using the Multidimensional Anxiety Scale for Children (MASC). Child depression was measured using the SMFQ. [The outcome "child's avoidant coping" was not extracted]

Synthesis of findings

Outcome	**Comparison/Risk factor/Exposure**	**Effect Size**	**#studies, # participants**	**Reference**
Communication avoidance				
Grief in parents	Lagged partner's POSR	Statistically significant: β: 0.051, 95%CI [0.000;0.102] (p=0.050) * *with harm for higher lagged POSR*	1, 438	Stroebe, 2013
	Current partner's POSR	Statistically significant: β: 0.052, 95%CI [0.003;0.101] (p=0.038) * *with harm for higher current POSR*		
Unresolved grief in siblings	Talking to parents about deceased sibling vs avoiding talking	Statistically significant: 23/64 vs 56/83 § OR: 3.70, 95%CI [1.86;7.35] (p=0.0002) * *With harm for avoiding talking about deceased sibling*	1, 64 vs 83	Lövgren, 2018
Anxiety in siblings	Talking to parents about deceased sibling vs avoiding talking	Statistically significant: 7/77 vs 21/96 § OR: 2.80, 95%CI [1.12;6.99] (p=0.03) * *With harm for avoiding talking about deceased sibling*	1, 77 vs 96	Wallin, 2016

Grief	Communication avoidance	Not statistically significant: R: -0.08 (p>0.05) £†	1, 97 §	Davis, 2016
Grief-related communication				
Grief in parents	Grief communication*time (interaction)	Statistically significant: β: -0.44 (p<0.05) £ *with benefit for more positive grief communication with increasing time since loss*	1, 72 §	Kamm, 2001
	Lagged partner's concern for grieving partner	Not statistically significant: β: 0.041, 95%CI [0.000;0.082] (p=0.051) *£†	1, 438	Stroebe, 2013
	Current partner's concern for grieving partner	Not statistically significant: β: -0.006, 95%CI [-0.049;0.037] (p=0.78) *£†		
Unresolved grief in siblings	Talking to anyone about the sibling's death vs not talking	Statistically significant: 53/110 vs 26/38 § OR: 0.43, 95%CI [0.20;0.94] (p=0.03) *With benefit for talking to anyone about the sibling's death*	1, 110 vs 38	Lövgren, 2018
	Satisfied with amount of sharing feelings about sibling's death with family vs wanted to talk more	Statistically significant: 39/96 vs 40/52 § OR: 0.21, 95%CI [0.10;0.44] (p=0.0001) * *With benefit for being satisfied with amount of sharing feelings with family*	1, 96 vs 52	
	Satisfied with amount of sharing feelings about sibling's death with people outside the family vs wanted to talk more	Statistically significant: 40/95 vs 39/52 § OR: 0.24, 95%CI [0.11;0.51] (p=0.0002) * *With benefit for being satisfied with amount of sharing feelings with people outside the family*	1, 95 vs 52	
Anxiety in siblings	Sharing ≥half of feelings about sibling's death with family vs sharing <half of feelings	Statistically significant: 7/84 vs 21/90 § OR: 0.30, 95%CI [0.12;0.75] (p=0.01) * *With benefit for sharing feelings about sibling's death with family*	1, 84 vs 90	Wallin, 2016
	Satisfied with amount of sharing feelings about sibling's death with family vs wanted to talk more	Statistically significant: 14/124 vs 14/50 § OR: 0.33, 95%CI [0.14;0.75] (p=0.008) * *With benefit for being satisfied with amount of talking to family about feelings*	1, 124 vs 50	
Anxiety in children	Caregiver's positive emotion words	Not statistically significant: β: -0.28 (p>0.05) £†	1, 39 §	Wardecker, 2017
	Caregiver's positive emotion words*time (interaction)	Statistically significant: β: -0.42 (p<0.05) £ *With benefit for more positive emotion words with increasing time since loss*		
Depression in children	Caregiver's positive emotion words	Statistically significant: β: -0.36 (p<0.05) £ *With benefit for more positive emotion words*		
	Caregiver's positive emotion words*time (interaction)	Statistically significant: β: -0.47 (p<0.01) £ *With benefit for more positive emotion words with increasing time since loss*		
	Mother communality	Not statistically significant: Partial r: -0.41 (p=0.07) £†	1, 23 §	Shapiro, 2014
Maladaptive grief in children		Statistically significant: Partial r: -0.44 (p<0.05) £ *With benefit for higher mother communality*		
Grief	Openness of family communication about grief	Not statistically significant: β: 0.03, 95%CI [-0.05;0.11] (p=0.45) *£†	1, 335 §	Liew, 2018
Psychological health (distress) in spouse/partner	Disclosure of emotions 4 months post-bereavement	Not statistically significant: β: 0.04 (p>0.05) £†	1, 128 §	Stroebe, 2002
	Disclosure of emotions 11 months post-bereavement	Statistically significant: β: 0.28 (p<0.05) £ *With harm for higher disclosure of emotions*		
	Disclosure of emotions 18 months post-bereavement	Not statistically significant: β: 0.02 (p>0.05) £†		

	Disclosure of emotions 25 months post-bereavement	Not statistically significant: β: -0.11 (p>0.05) £†		
Phone call from hospital to bereaved parents				
Loneliness/depression in parents	Phone call from the neonatologist vs no phone call	Statistically significant: 7/18 vs 10/11 § OR: 0.06, 95%CI[0.01;0.61] (p=0.02) * *With benefit for a phone call*	1, 18 vs 11	Schreiner, 1979
Guilt in parents		Statistically significant: 7/18 vs 10/11 § OR: 0.06, 95%CI[0.01;0.61] (p=0.02) * *With benefit for a phone call*		
Anger/hostility in parents		Not statistically significant: 2/18 vs 4/11 § OR: 0.22, 95%CI[0.03;1.49] (p=0.12) *¥		
Communication in general				
Grief in fathers	Talking with friends vs not talking with friends	Statistically significant: β: 0.206, 95%CI [0.032;0.380] * (p=0.022) *with benefit for talking with friends*	1, 114 §	Rich, 2000
Anxiety in children	Parent-child communication	Statistically significant: β: -0.284, 95%CI [-0.519;-0.049] * (p=0.020) *with benefit for more frequent parent-child communication*	1, 82 §	Raveis, 1999
Depression in children		Statistically significant: β: -0.375, 95%CI [-0.590;-0.160] * (p=0.001) *With benefit for more frequent parent-child communication*		
Grief	Communication within family	Not statistically significant: β: 0.30, 95%CI [-0.17;0.77] (p=0.22) *£†	1, 61 §	Traylor, 2003

β: regression coefficient, OR: odds ratio, CI: confidence interval, r: correlation coefficient
* Calculations done by the reviewer(s) using Review Manager software
£ No raw data available, effect size and CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Experimental studies

Author, Year	Lack of randomization or lack of allocation concealment	Lack of blinding (participants; personnel; outcome assessors)	Incomplete accounting of outcome events	Selective outcome reporting	Other limitations
Schreiner, 1979	unclear, not specified in the article	Participants: no; personnel: yes; outcome assessors: yes	No	No	Small sample size Unequal number of participants in each group No baseline data No table of patient characteristics Intention-to-treat analysis not stated Statistical method not stated

Observational studies

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Davis, 2016	No	Yes (cross-sectional study design with	Yes (only crude correlations reported)	n/a (cross-sectional)	Incomplete reporting of test

		questionnaires)			statistics. No COI statement.
Kamm, 2001	No	Yes (potential intra-couple contamination; cross-sectional study design with questionnaires)	Partly (only time since death)	n/a (cross-sectional)	No raw data available. No COI statement.
Liew, 2018	No	Yes (cross-sectional study design with questionnaires)	No (multivariate regression model)	n/a (cross-sectional)	No COI statement.
Lövgren, 2018	Yes (Multiple siblings per family could participate: clustering)	Yes (potential recall bias: reporting feelings/ experiences of av. 6 years ago; outcome = one single question; cross-sectional study design with questionnaires)	Yes (crude associations in simple logistic models)	n/a (cross-sectional)	Clustering not taken into account in statistical modelling.
Raveis, 1999	No	Yes (cross-sectional study design with questionnaires)	No	n/a (cross-sectional)	No COI statement.
Rich, 2000	Yes (Husbands and wives could participate: clustering)	Yes (potential recall bias and intra-couple contamination; talking variables: not clear whether dichotomous or Likert scale; timing variables: no information; cross-sectional study design with questionnaires)	No	n/a (cross-sectional)	Clustering not taken into account in statistical modelling. No quantitative reporting of NS variables. No COI statement.
Shapiro, 2014	Yes (Multiple siblings per family could participate: clustering)	Yes (cross-sectional study design with questionnaires)	Yes (only crude correlations reported)	n/a (cross-sectional)	Incomplete reporting of test statistics. Clustering not taken into account in statistical modelling.
Stroebe, 2002	No	Yes (cross-sectional study design with questionnaires; potential recall bias for baseline values)	Yes (only crude correlations reported)	Yes (153/281 (54%) dropped out during course of study, and these had less depression symptoms)	Incomplete reporting of test statistics. No information on statistical method (linear structural analysis). No COI statement.
Stroebe, 2013	No	Yes (potential intra-couple contamination)	No (multilevel regression model, taking into account clustering)	No (18% dropped out during course of study, and they differed in partner support only from those who continued)	No
Traylor, 2003	No	Unclear (no information on how data were collected: interview, mail,…)	No (multivariate regression model)	No (only 7.5% dropped out during course of study	No COI statement
Wallin, 2016	Yes (Multiple siblings per family could participate: clustering)	Yes (cross-sectional study design with questionnaires; potential recall bias)	Yes (only crude associations reported)	n/a (cross-sectional)	Clustering not taken into account in statistical modelling.
Wardecker, 2017	Yes (recruited from bereavement support groups in	Yes (cross-sectional study design with questionnaires)	No	n/a (cross-sectional)	Incomplete reporting of test statistics.

	which caregivers may have had greater knowledge regarding how to speak with their bereaved youth)				

Certainty of the body of evidence

1. Communication avoidance

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Low number of events and/or lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

2. Grief-related communication

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Lack of data (in considerable number of studies)
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

3. Phone call from hospital to bereaved parents

	Initial grading High [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size and low number of events
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Low [C]**	

4. Communication in general

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Low number of events
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	Communication avoidance There is limited evidence with harm for communication avoidance.

It was shown that there is a statistically significant association between unresolved grief and avoiding talking to one's parents about a **deceased sibling**, and between anxiety and avoiding talking to one's parents about a deceased sibling (Lövgren 2018, Wallin 2016). Moreover, it was shown that increased partner-oriented self-regulation (POSR) resulted in a statistically significant increased grief in **bereaved parents** 7 months later and also that there is a statistically significant association between an increase in grief and an increase in current POSR (Stroebe 2013). However, a statistically significant association between grief in **bereaved students** and communication avoidance could not be demonstrated (Davis 2016).

Evidence is of very low quality and results cannot be considered precise due to low number of events and/or lack of data. No causal relationship can be inferred from these results.

Note: POSR is defined as avoiding talking about the loss and trying to remain strong in each other's presence.

Grief-related communication

There is limited evidence with benefit for grief-related communication.

In **bereaved parents** of deceased children, it was shown that there is a statistically significant association between decreased grief and more positive grief communication with increasing time since loss (Kamm 2001). However, a statistically significant association between grief and either lagged or current partner's concern for their grieving partner could not be demonstrated (Stroebe 2013).

In **bereaved siblings**, it was shown that there is a statistically significant association between both decreased grief and anxiety and talking about loss (Lövgren 2018, Wallin 2016), and between both decreased grief and anxiety and satisfaction with the amount of talking about the loss (Lövgren 2018, Wallin 2016).

In **bereaved children** of a deceased parent, it was shown that there is a statistically significant association between both a decrease in anxiety and depression in children and the remaining caregiver's positive emotion words, especially with increasing time since loss (Wardecker 2017). Moreover, there is a statistically significant association between a decrease in maladaptive grief and an increase in mother communality (Shapiro 2014). However, a statistically significant association between a decrease in depression and an increase in mother communality could not be demonstrated (Shapiro 2014).

In **bereaved partners**, a statistically significant association between a decrease in distress and increased disclosure of emotions 4, 18 or 25 months post-bereavement could not be demonstrated. However, at 11 months post-bereavement, there was a statistically significant association between an increase in distress and increased disclosure of emotions (Stroebe 2002).

In **bereaved students**, a statistically significant association between a decrease in grief and more open family communication about grief could not be demonstrated (Liew 2018).

Evidence is of very low quality and results cannot be considered precise due to low number of events and/or lack of data. No causal relationship can be inferred from these results.

Phone call

There is limited evidence in favour of a phone call from the hospital to **bereaved parents** after neonatal death.

It was shown that a phone call from the neonatologist resulted in a statistically significant decrease in loneliness/depression and feelings of guilt, compared to no phone call. However, a statistically significant decrease of anger/hostility, using a phone call compared to no phone call, could not be demonstrated (Schreiner 1979).

Evidence is of low quality and results cannot be considered precise due to limited sample size, low number of events and large variability of results.

Communication in general

There is limited evidence with benefit for communication in general.

In **bereaved fathers** of deceased children, it was shown that there is a statistically significant association between decreased grief and talking with friends (Rich 2000). In **bereaved children** of a deceased parent, it was shown that there is a statistically significant association between both decreased anxiety and decreased depression and more frequent parent-child communication (Raveis 1999). However, a

	statistically significant association between grief and communication within the family could not be demonstrated in **bereaved adults** (Traylor 2003). Evidence is of very low quality and results cannot be considered precise due to limited sample size and large variability of results. No causal relationship can be inferred from these results.
Reference(s)	**Systematic reviews** Harvey S, Snowdon C, Elbourne D. *Effectiveness of bereavement interventions in neonatal intensive care: a review of the evidence.* Semin Fetal Neonatal Med 2008, 13(5):341-356 Hoffmann R, Kaiser J, Kersting A. *Psychosocial outcomes in cancer-bereaved children and adolescents: A systematic review*. Psychooncology 2018, 27(10):2327-2338 **Articles** Davis EL, Deane FP, Lyons GC. *Prediction of individual differences in adjustment to loss: Acceptance and valued-living as critical appraisal and coping strengths.* Death Stud 2016, 40(4):211-222 Kamm S, Vandenberg B. *Grief communication, grief reactions and marital satisfaction in bereaved parents.* Death Stud 2001, 25(7):569-582. Liew CH, Servaty-Seib HL. *College student grief, grief differences, family communication, and family satisfaction.* Death Stud 2018, 42(4):228-238 Lövgren M, Sveen J, Nyberg T, Eilegård Wallin A, Prigerson HG, Steineck G, Kreicbergs U. *Care at End of Life Influences Grief: A Nationwide Long-Term Follow-Up among Young Adults Who Lost a Brother or Sister to Childhood Cancer*. J Palliat Med 2018, 21(2):156-162 Raveis V, Siegel K, Karus D. *Children's Psychological Distress Following the Death of a Parent*. J Youth Adolesc 1999, 28(2):165-180 Rich DE. *The impact of postpregnancy loss services on grief outcome: integrating research and practice in the design of perinatal bereavement programs*. Illness, Crisis & Loss 2000, 8(3):244-264 Schreiner RL, Gresham EL, Green M. *Physician's responsibility to parents after death of an infant. Beneficial outcome of a telephone call*. Am J Dis Child. 1979, 133(7):723-726. Shapiro DN, Howell KH, Kaplow JB. *Associations among mother-child communication quality, childhood maladaptive grief, and depressive symptoms.* Death Stud 2014, 38(1-5):172-178 Stroebe M, Stroebe W, Schut H, Zech E, van den Bout J. *Does disclosure of emotions facilitate recovery from bereavement? Evidence from two prospective studies.* J Consult Clin Psychol 2002, 70(1):169-78. Stroebe M, Finkenauer C, Wijngaards-de Meij L, Schut H, van den Bout J, Stroebe W. *Partner-oriented self-regulation among bereaved parents: the costs of holding in grief for the partner's sake.* Psychol Sci 2013, 24(4):395-402 Traylor ES, Hayslip B Jr, Kaminski PL, York C. *Relationships between grief and family system characteristics: a cross lagged longitudinal analysis*. Death Stud 2003, 27(7):575-601 Wallin AE, Steineck G, Nyberg T, Kreicbergs U. *Insufficient communication and anxiety in cancer-bereaved siblings: A nationwide long-term follow-up.* Palliat Support Care 2016, 14(5):488-494 Wardecker BM, Kaplow JB, Layne CM, Edelstein RS. *Caregivers' positive emotional expression and children's psychological functioning after parental loss.* J Child Fam Stud 2017, 26(12):3490-3501

1.8 Psychosis

Subtopic	Psychosis
Intervention	Communication
Question (PICO)	In people who suffer from psychosis (P), is communicating (I) effective for improving mental health (O) compared to no intervention or another intervention (C)?

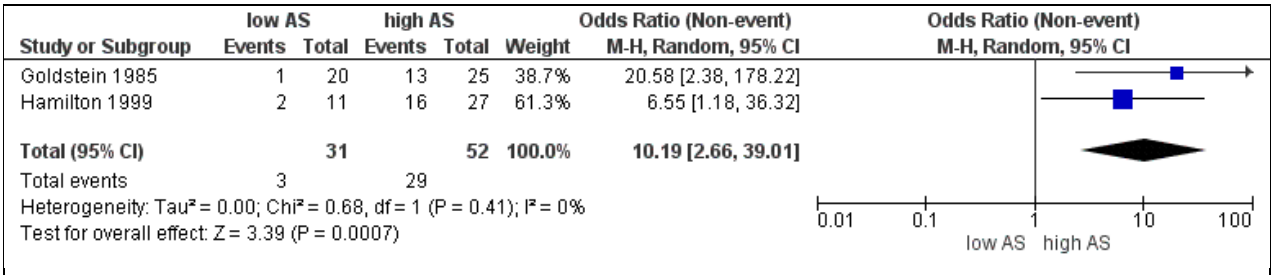
Characteristics of included studies

Author, year, Country	Study design	Population	Risk factor/ Exposure	Remarks
Goldstein, 1985	Observational: prospective cohort study	Nr of participants: 64 teenagers at risk for schizophrenia at baseline, of which 38 with complete data after 15 years Age: "teenagers" (at baseline)	Relevant risk factors: - Parental communication deviance (CD) - Parental expressed emotion (EE) - Parental affective style (AS)	Obtained from 20 most similar studies to Velligan 1996 Thorough description of subjects lost to follow-up. CD and EE were measured by thematic apperception test (TAT) Three groups of EE: - Dual high: both parents high EE - [Mixed: one parent high, other low EE; not extracted] - Dual low: both parents low EE Largely based on criticism criterion, EE was used in the criticism meta-analysis.
Hamilton, 1999, USA	Observational: case-control study	Nr of participants: 59 children: depressive (21), schizophrenic (18), control (20); and their parents Age range (children): 7-14 years	Relevant risk factors: - Parental AS [data on depression were not extracted]	Obtained from reference list O'Brien 2009 Association between child diagnostic status (3 categories) and parental AS expressed as distributions.
O'Brien, 2009, USA	Observational: prospective cohort study	Nr of participants: 33 (20 males) at baseline, 27 at follow-up. Adolescents at ultra-high risk for developing psychosis. Mean or median age (unclear from paper): 15.7 years	Relevant risk factors: - Problem solving - Constructive communication - Conflictual communication All of these scored for both parents and adolescents. [data from the Camberwell Family Interview (CFI) were not extracted because the CFI measured talking about instead of with patient]	2 outcomes: - Clinical symptoms rated on Scale of Prodromal Symptoms (SOPS): positive and negative prodromal symptoms - Social functioning by SCOS. 1 intervention (problem solving interaction), quantified all three risk factors; 1 intervention (Family Interaction Task, FIT) did not quantify problem solving; Associations between risk factors at baseline and outcomes after 6 months are expressed as correlation coefficients (Table 4).
Rund, 1986, Norway	Observational: case-control study	Nr of participants: 50 parental pairs of schizophrenic patients (21), nonpsychotic psychiatric patients (9) or healthy controls (20). Mean age of parents: 53.9 years	Relevant risk factors: - Parental CD - Parental communication efficiency (in problem solving) - Parental egocentrism [data on nonpsychotic psychiatric patients were not extracted]	Obtained from 20 most similar studies to Velligan 1996 Intervention for parents only, not for patients. 1 intervention (TAT) quantified CD only; 1 intervention (communication conflict situation, CCS) quantified CD and communication efficiency.

Velligan, 1996, USA	Observational: prospective cohort study	Nr of participants: 20 schizophrenic patients (all men) from one hospital and their parents. Mean age: 27.4 years	Relevant risk factor: - Parental CD	Outcome: relapse in schizophrenia 1 year after hospital discharge The intervention (FIT) quantified CD at discharge. CD was calculated in 3 ways: - Total (raw data) - Ratio (to correct for level of verbosity) - Weighted (to represent more severe problems in the communication of meaning) Associations between risk factors at baseline and after discharge and outcomes are inspected with t-tests.

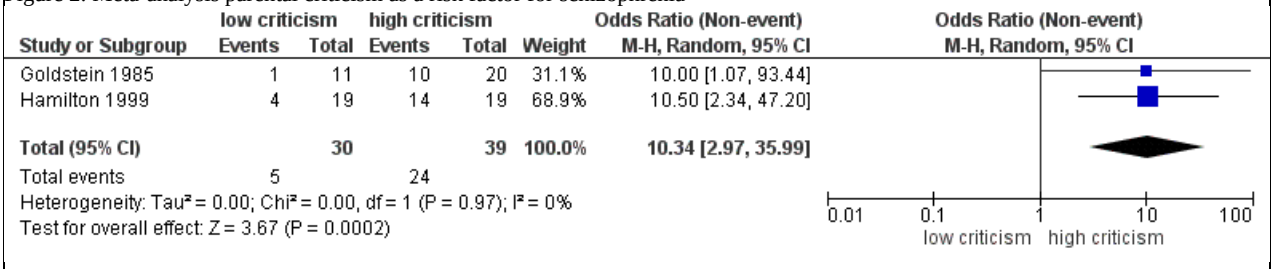
Synthesis of findings

Outcome	Risk factor/ Exposure	Effect Size	#studies, # participants	Reference
Parental communication deviance (CD)				
Relapse in schizophrenia	Parental total CD	Statistically significant: no relapse vs relapse: 7.00±5.17 vs 13.67±9.21$ MD=6.67, 95%CI [0.35;12.99] (p=0.04)* *with harm for increased parental CD*	1, 8 vs 12 §	Velligan, 1996
	Parental ratio CD	Statistically significant: no relapse vs relapse: 0.15±0.09 vs 0.29±0.17$ MD=0.14, 95%CI [0.03;0.25] (p=0.02)* *with harm for increased parental CD*		
	Parental weighted CD	Statistically significant: no relapse vs relapse: 0.13±0.07 vs 0.24±0.10$ MD=0.11, 95%CI [0.04;0.18] (p=0.004)* *with harm for increased parental CD*		
Schizophrenia spectrum disorder	Low vs intermediate vs high parental CD	Statistically (borderline) significant: 1/11 vs 5/19 vs 10/20 § p=0.055** *with harm for increased parental CD*	1, 11 vs 19 vs 20	Goldstein, 1985
Schizophrenia	Parental CD (measured with TAT)	Not statistically significant: Schizophrenic vs healthy control: 20.52±12.39 vs 18.23±9.01$ MD=2.29, 95%CI [-2.38;6.96] (p=0.34)*	1, 42 vs 40 §	Rund, 1986
	Parental CD (measured with CCS)	Statistically significant: Schizophrenic vs healthy control: 38.60±28.46 vs 19.15±17.38$ MD=19.45, 95%CI [9.30;29.60] (p=0.0002)* *with harm for increased parental CD*	1, 42 vs 40 §	
Parental affective style (AS)				
Schizophrenia	Parental low vs high AS profile	Meta-analysis (see Figure 1) Statistically significant: 3/31 vs 29/52 § OR=10.19, 95%CI [2.66;39.01], I^2=0% (p=0.0007)** *with harm for high parental AS*	2, 31 vs 52	Goldstein, 1985; Hamilton, 1999
Figure 1: Meta-analysis parental affective style as a risk factor for schizophrenia				



Parental criticism				
Schizophrenia	Parental (dual) low vs (dual) high criticism	Meta-analysis (see Figure 2) Statistically significant: 5/30 vs 24/39 § OR=10.34, 95%CI [2.97;35.99], I²=0% (p=0.0002)** *with harm for high parental criticism*	2, 30 vs 39	Goldstein 1985, Hamilton 1999

Figure 2: Meta-analysis parental criticism as a risk factor for schizophrenia



Parental problem solving				
Schizophrenia	Parental problem solving ("simple situation")	Not statistically significant: Schizophrenic vs healthy control: 7.71±7.24 min vs 4.55±7.17 min $ MD=3.16, 95%CI [-1.25;7.57] (p=0.17)*	1, 21 cases vs 20 controls§	Rund 1986
	Parental problem solving ("conflict situation")	Statistically significant: Solvers in schizophrenic vs healthy control: 3/21 vs 10/20 § $ OR=6.00, 95%CI [1.33;27.00] (p=0.02)* *with benefit for parental problem solving*	1, 21 cases vs 20 controls	
Social functioning	Parental problem solving	Not statistically significant: Pearson r=0.19 (p>0.05)†	1, 27§	O'Brien 2009
	Parental constructive communication	Statistically significant: Pearson r=0.36 (p<0.05) *with benefit for constructive parental communication*	1, 27§	
	Parental conflictual communication	Not statistically significant: Pearson r=0.21 (p>0.05)†	1, 27§	
Parental egocentrism				
Schizophrenia	Maternal egocentrism	Statistically significant: Schizophrenic vs healthy control: 29.38±19.37 vs 14.45±11.97 MD=14.93, 95%CI [5.12;24.74] (p=0.003)* *with harm for increased maternal egocentrism*	1, 21 cases vs 20 controls§	Rund 1986
Schizophrenia	Paternal egocentrism	Statistically significant: Schizophrenic vs healthy control: 13.52±12.59 vs 7.05±7.80 MD=6.47, 95%CI [0.09;12.85] (p=0.05)* *with harm for increased paternal egocentrism*	1, 21 cases vs 20 controls§	Rund 1986

Mean ± SD (unless otherwise indicated), SD: standard deviation, MD: mean difference, OR: odds ratio, r: correlation coefficient, min: minutes
* Calculations done by reviewer using Review Manager software
** Calculations (Fisher's exact test) done by reviewer using R software
£ No raw data available
§ Imprecision (limited sample size or low number of events)
† Imprecision (lack of data)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Goldstein, 1985	No	Unclear	Yes. No covariates are considered. Relapse at baseline was tested separately.	Yes. Considerable loss to follow-up (28%), possible bias (lost to follow-up more severe disorder)	Representativeness (indirectness): predominantly Caucasian of middle to upper middle class status and of above average intelligence
Hamilton, 1999	No	No	No. No covariates were entered in the analysis, but most important ones were matched upon.	N/A	No
O'Brien, 2009	No	Unclear: no details on outcome measurement.	Yes. Corrected for symptoms at baselines, but no other covariates are considered.	No. Limited loss to follow-up (18%)	Representativeness (indirectness): almost all parents all mothers (82%)
Rund, 1986	No	No	No. No covariates were entered in the analysis, but most important ones were matched upon.	N/A	Statistical tests: one erroneous result and one not taking into account clustering of data.
Velligan, 1996	No	No	Yes. No covariates are considered.	Yes. 33% no follow-up data without further explanation.	No

Certainty of the body of evidence

1. Parental communication deviance

	Initial grading: Low [C]	Downgrading due to
Limitations of study design	0	See table 'Quality of evidence'
Imprecision	-1	Limited sample sizes or low number of events
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading: Very low [D]**	

2. Parental affective style (based on meta-analysis)

	Initial grading: Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Low number of events
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	+1	very large effect (OR>10) and study with highest weight has no serious problems
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading: Very low [D]**	

3. Parental criticism (based on meta-analysis)

	Initial grading: Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Low number of events

Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	+1	very large effect (OR>10) and study with highest weight has no serious problems
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading: Very low [D]**	

4. Parental problem solving

	Initial grading: Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample sizes, low number of events or lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading: Very low [D]**	

5. Parental egocentrism

	Initial grading: Low [C]	Downgrading due to
Limitations of study design	0	See table 'Quality of evidence'
Imprecision	-1	Limited sample sizes
Inconsistency	0	
Indirectness	0	
Publication bias	0	Unclear
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading: Very low [D]**	

Conclusion	<u>Parental communication deviance</u> There is limited evidence with harm for parental communication deviance (CD). It was shown that high parental CD resulted in a statistically significant increased risk of developing schizophrenia in adolescents, compared to low parental CD (Goldstein 1985, Rund 1986). Furthermore, it was shown that high parental CD resulted in a statistically significant increased risk of relapse in schizophrenic patients, compared to low parental CD (Velligan 1996). However, in one study a statistically significant increased risk of schizophrenia in case of parental CD, when measured using the Thematic Apperception Test, could not be demonstrated (Rund 1986). Evidence is of very low quality and results cannot be considered precise due to limited sample size or low number of events. <u>Parental affective style</u> There is limited evidence with harm for high parental affective style (AS). It was shown that high parental AS resulted in a statistically significant increased risk of developing schizophrenia in adolescents, compared to low parental AS (Goldstein 1985, Hamilton 1999). Evidence is of very low quality and results cannot be considered precise due to low number of events. <u>Parental criticism</u> There is limited evidence with harm for parental criticism. It was shown that high parental criticism resulted in a statistically significant increased risk of developing schizophrenia in adolescents, compared to low parental criticism (Goldstein 1985, Hamilton 1999). Evidence is of very low quality and results cannot be considered precise due to low number of events. <u>Parental problem solving</u>

	There is limited evidence with benefit for parental problem solving. In making this evidence conclusion, we place a higher value on the outcome schizophrenia over social functioning. It was shown that high parental problem solving in conflict situations resulted in a statistically significant decreased risk of developing schizophrenia in adolescents, compared to low parental problem solving (Rund 1986). However, a statistically significant decreased risk of schizophrenia in case of parental problem solving in simple situations could not be demonstrated (Rund 1986). It was shown that high parental constructive communication resulted in a statistically significant increased level of social functioning in adolescents at ultra-high risk of developing schizophrenia, compared to low parental constructive communication (O'Brien 2009). However, a statistically significant increased level of social functioning in case of parental conflictual communication or parental problem solving could not be demonstrated (O'Brien 2009). Evidence is of very low quality and results of these studies are imprecise due to limited sample size, low number of events or lack of data. Parental egocentrism There is limited evidence with harm for parental egocentrism. It was shown that high maternal and paternal egocentrism resulted in a statistically significant increased riks of developing schizophrenia in adolescents, compared to low parental egocentrism (Rund 1986). Evidence is of very low quality and results cannot be considered precise due to limited sample size.
Reference(s)	**Articles** Goldstein MJ. *Family factors that antedate the onset of schizophrenia and related disorders: the results of a fifteen year prospective longitudinal study*. Acta Psychiatr Scand Suppl 1985, 319:7-18. Hamilton EB, Asarnow JR, Tompson MC. *Family interaction styles of children with depressive disorders, schizophrenia-spectrum disorders, and normal controls*. Fam Process 1999, 38(4):463-476. O'Brien MP, Zinberg JL, Ho L, Rudd A, Kopelowicz A, Daley M, Bearden CE, Cannon TD. *Family problem solving interactions and 6-month symptomatic and functional outcomes in youth at ultra-high risk for psychosis and with recent onset psychotic symptoms: a longitudinal study*. Schizophr Res 2009, 107(2-3):198-205. Rund BR. *Communication deviances in parents of schizophrenics*. Fam Process 1986, 25(1):133-147. Velligan DI, Miller AL, Eckert SL, Funderburg LG, True JE, Mahurin RK, Diamond P, Hazelton BC. *The relationship between parental communication deviance and relapse in schizophrenic patients in the 1-year period after hospital discharge. A pilot study*. J Nerv Ment Dis 1996, 184(8):490-496.

1.9 Non-suicidal self-injury

Topic	Auto-mutilation
Intervention	Communication
Question (PICO)	In people who engage in auto-mutilation (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing auto-mutilation (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

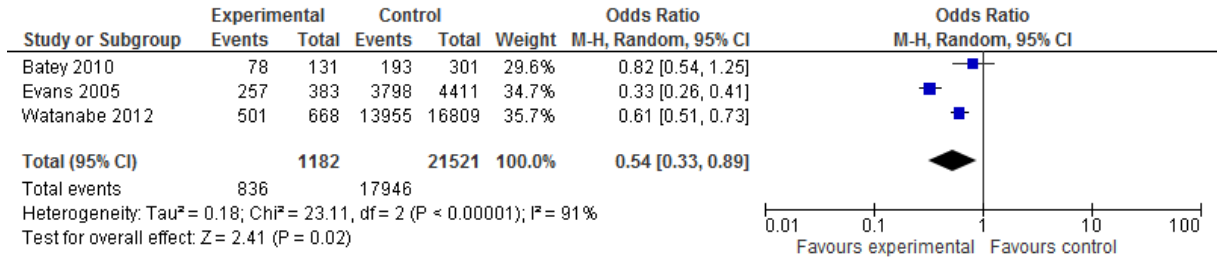
Author, year, Country	Study design	Population	Comparison/Risk factor	Remarks
Batey, 2010, UK	Observational: Case-control study	Nr of participants: 432 members of the university: - 308 female - 124 male Mean age: 25.1 years 131 people with auto-mutilation vs 301 people without auto-mutilation	Relevant risk factors: - Talking to a friend or family member as a coping strategy for stress	Identified from similar studies in PubMed. Outcomes were measured once. Childhood trauma, self-worth, impulsivity, problem solving: 7-point Likert scale Depersonalization and absorption items from the dissociative experiences scale: 5-point Likert scale Intrusive thoughts: 4-point Likert scale Self-harm items (see questionnaire in article)
Evans, 2005, UK	Observational: Case-control study	Nr of participants: 6020 Year 11 high-school students - 2810 female - 3186 male - 24 gender unknown Age: 15-16 years 5737 completed both DSH and thoughts of self-harm questions 398 people with auto-mutilation (299 female) vs 863 people with thoughts of auto-mutilation but no actual auto-mutilation (602 female) vs 4476 people without auto-mutilation	Relevant risk factors: - Able to talk to father - Able to talk to mother - Able to talk to sibling - Able to talk to another relative - Able to talk to a friend - Able to talk to a teacher - Able to talk to somebody else about things that really bother them - Talk to someone • as a coping strategy when worried or upset	Identified from reference list. Outcomes were measured once. Survey included: Socio-demographics, Deliberate self-harm and suicidal ideation, Help-seeking, Communication, Coping strategies
Latina, 2015, Italy	Observational: Cross-sectional study [Measured twice]	Nr of participants: 832 students at T1 123 lost to follow-up, resulting in 709 students at T2: - 332 female - 377 male • Mean age (SD): 15.53 (1.03) years Prevalence of auto-mutilation: - 24% at T1 - 17% at T2	Relevant risk factors: - Ease of communication with parents - Co-rumination with friends [only data of people with depression were extracted since these were most relevant for the first aid situation; the general data can only be used when talking about prevention]	Outcomes were measured at baseline and after 6 months. Self-harm questionnaire: 6 items, each scored on a 5-point Likert scale. Ease of communication with parents: 2 items, each on a 4-point Likert scale. Co-rumination: abbreviated version of the co-rumination questionnaire. 9 items, each scored on a 5-point Likert scale. Depressive symptoms: SMFQ 13 items, each scored

				on a 3-point Likert scale.
Portzky, 2008, Belgium	Observational: Cross-sectional study	Nr of participants: 8889 students - 4515 females - 4296 males - 78 gender unknown Mean age (SD) Belgium: 15.45 (0.8) years Mean age (SD) Netherlands: 15.5 (0.6) years Prevalence of: - Auto-mutilation in past year: 430 - Auto-mutilation in lifetime: 643	Relevant risk factors: - Not able to talk to (step)mother - Not able to talk to (step)father - Not able to talk to sibling - Not able to talk to a friend - Not able to talk to a teacher - Not able to talk to somebody else about their problems and difficulties	Identified from reference list. Outcomes were measured once. Survey included: Socio-demographic and lifestyle information, deliberate self-harm behavior and suicidal ideation (yes/no questions), coping, depression and anxiety (HADS), impulsivity (6 items from the Plutchick's Impulsivity Scale), and self-esteem (8 items of the Self Concept Scale)
Watanabe, 2012, Japan	Observational: Case-control study	Nr of participants: 18104 adolescents 8430 adolescents (age range 12-15) - 4084 female - 4346 male 9241 adolescents (age range 15-18) - 4786 female - 4455 male 672 people with auto-mutilation vs 16999 people without auto-mutilation	Relevant risk factors: - Having someone to discuss psychological problems	Identified from similar studies in PubMed. Outcomes were measured once. Survey included: socio-demographics, self-harm, suicidal thoughts, 12-item General Health Questionnaire, coping.

Synthesis of findings

Outcome	Comparison/Risk factor	Effect Size	#studies, # participants	Reference
Talking as a coping strategy				
Risk factor for auto-mutilation				
Auto-mutilation	Talking as a coping strategy	Meta-analysis (see Figure 1) <u>Statistically significant:</u> 836/1182 vs 17946/21521 OR: 0.54, 95%CI [0.33;0.89] I^2=91% (p=0.02)* *With benefit for talking as a coping strategy*	3, 1182 vs 21521	Batey, 2010 Evans, 2005 Watanabe, 2012

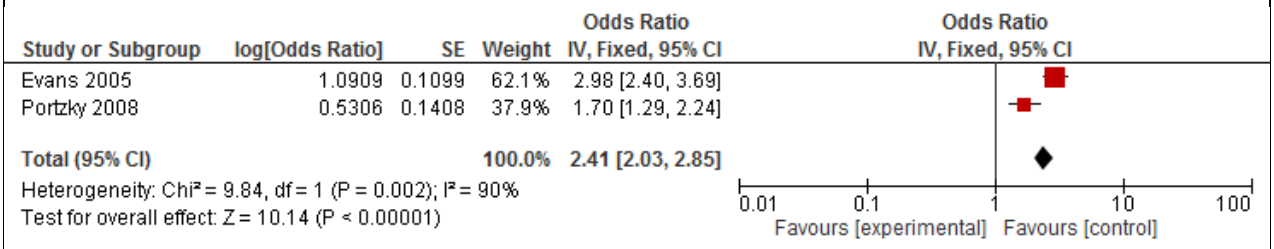
Figure 1: Meta-analysis talking as a coping strategy as a risk factor for auto-mutilation



Ease of communication with parents				
Risk factor for auto-mutilation				
Auto-mutilation at T2	Ease of communication with parents at T1 in depressed adolescents	<u>Statistically significant:</u> Beta= -.12 £† (p<.05) *With benefit for ease of communication*	1, 709	Latina, 2015

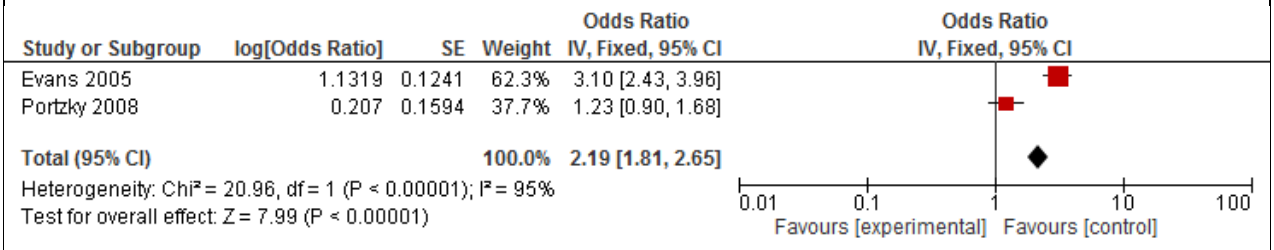
		with parents at T1		
Not able to talk to mother				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to mother	Meta-analysis (see Figure 2) <u>Statistically significant:</u> OR: 2.41, 95%CI [2.03;2.85] I²=90% (p<0.0001)* *With harm for not being able to talk to mother*	1, 13555	Evans, 2005 Portzky, 2008

Figure 2: Meta-analysis not able to talk to mother as a risk factor for auto-mutilation



Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to mother	<u>Statistically significant:</u> 367/825 vs 1229/4336 OR: 2.03, 95%CI [1.74;2.36] (p<0.0001)* *With harm for not being able to talk to mother*	1, 825 vs 4336	Evans, 2005
Risk factor for auto-mutilation repetition (multiple episodes)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to mother	<u>Statistically significant:</u> 122/199 vs 74/165 § OR: 1.95, 95%CI [1.28;2.96] (p=0.002)* *With harm for not being able to talk to mother*	1, 199 vs 165	Evans, 2005
Not able to talk to father				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to father	Meta-analysis (see Figure 3) <u>Statistically significant:</u> OR: 2.19, 95%CI [1.81;2.65] I²=95% (p<0.0001)* *With harm for not being able to talk to father*	1, 13555	Evans, 2005 Portzky, 2008

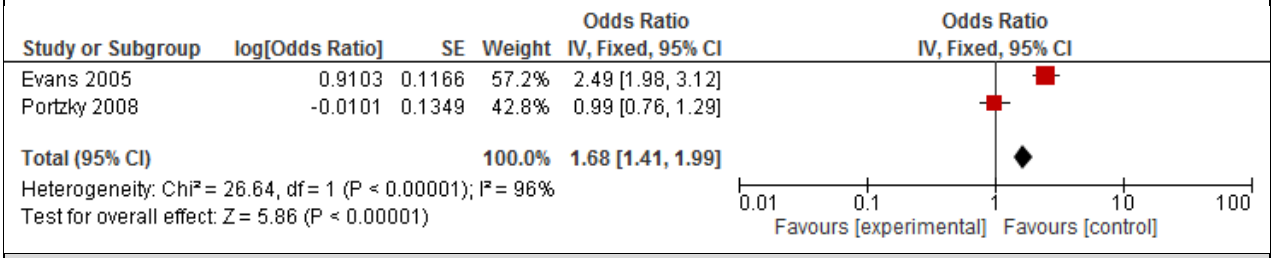
Figure 3: Meta-analysis not able to talk to father as a risk factor for auto-mutilation



Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to father	<u>Statistically significant:</u> 575/825 vs 2120/4296 OR: 2.36, 95%CI [2.01;2.77] (p<0.0001)* *With harm for not being able to talk to father*	1, 825 vs 4296	Evans, 2005
Risk factor for auto-mutilation repetition (multiple episodes)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to father	Not statistically significant: 156/198 vs 120/168 §	1, 198 vs 168	Evans, 2005

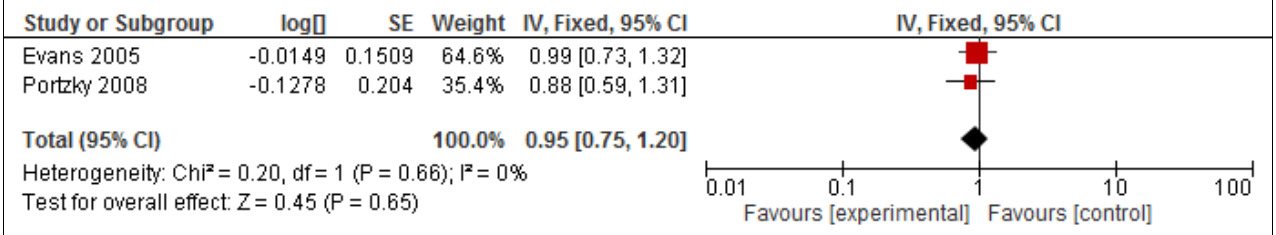
		OR: 1.49, 95%CI [0.92;2.40] ¥ (p=0.10)*		
Not able to talk to sibling				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to sibling	Meta-analysis (see Figure 4) <u>Statistically significant:</u> OR: 1.68, 95%CI [1.41;1.99] I²:96% (p<0.0001)* *With harm for not being able to talk to sibling*	1, 13555	Evans, 2005 Portzky, 2008

Figure 4: Meta-analysis not able to talk to sibling as a risk factor for auto-mutilation



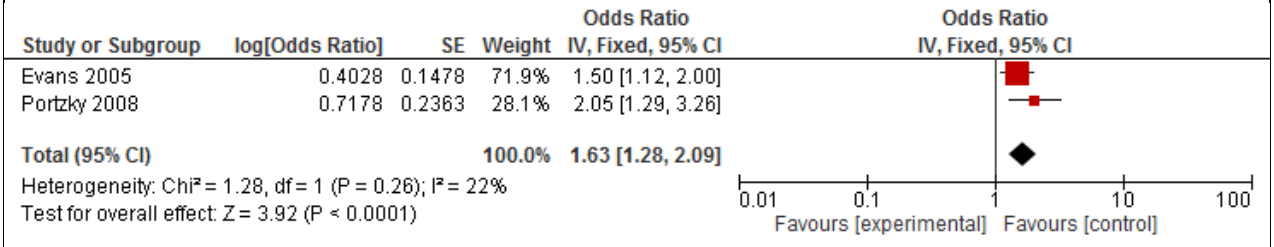
Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to sibling	<u>Statistically significant:</u> 479/827 vs 2007/4283 OR: 1.56, 95%CI [1.34;1.81] (p<0.0001)* *With harm for not being able to talk to sibling*	1, 827 vs 4283	Evans, 2005
Risk factor for auto-mutilation repetition (multiple episodes)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to sibling	Not statistically significant: 140/199 vs 109/164 § OR: 1.20, 95%CI [0.77;1.87] ¥ (p=0.43)*	1, 199 vs 164	Evans, 2005
Able to talk to another relative				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to another relative	<u>Statistically significant:</u> 263/369 vs 2493/4303 OR: 1.80, 95%CI [1.43;2.28] (p<0.0001)* *With harm for not being able to talk to another relative*	1, 369 vs 4303	Evans, 2005
Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to another relative	<u>Statistically significant:</u> 581/814 vs 2493/4303 OR: 1.81, 95%CI [1.54;2.13] (p<0.0001)* *With harm for not being able to talk to another relative*	1, 814 vs 4303	Evans, 2005
Risk factor for auto-mutilation repetition (multiple episodes)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to another relative	<u>Statistically significant:</u> 159/203 vs 106/168 § OR: 2.11, 95%CI [1.34;3.34] (p=0.0014)* *With harm for not being able to talk to another relative*	1, 203 vs 168	Evans, 2005
Not able to talk to a friend				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to a friend	Meta-analysis (see Figure 5) Not statistically significant: OR: 0.95, 95%CI [0.75;1.20] ¥ I²=0% (p=0.65)*	1, 13555	Evans, 2005 Portzky, 2008

Figure 5: Meta-analysis not able to talk to a friend as a risk factor for auto-mutilation



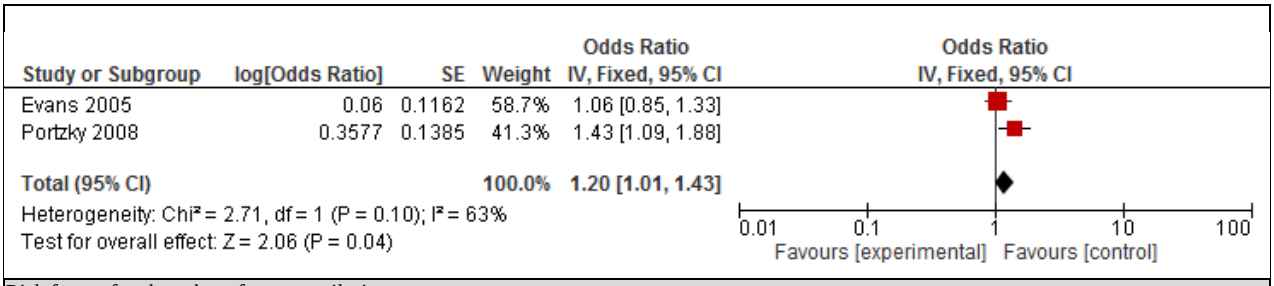
Auto-mutilation at T2	Co-rumination with friends at T1 in depressed adolescents	Not statistically significant: Beta=.05 £† (p=.190)	1, 709	Latina, 2015
Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to friend	Not statistically significant: 121/837 vs 652/4357 OR: 0.96, 95%CI [0.78;1.18] ¥ (p=0.71)*	1, 837 vs 4357	Evans, 2005
Risk factor for auto-mutilation repetition (multiple events)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to friend	Not statistically significant: 35/203 vs 23/175 OR: 1.38, 95%CI [0.78;2.43] ¥ (p=0.27)*	1, 203 vs 175	Evans, 2005
Not able to talk to a teacher				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to teacher	Meta-analysis (see Figure 6) Statistically significant: OR: 1.63, 95%CI [1.28;2.09] I²=22% (p<0.0001)* *With harm for not being able to talk to teacher*	1, 13555	Evans, 2005 Portzky, 2008

Figure 6: Meta-analysis not able to talk to a teacher as a risk factor for auto-mutilation



Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to teacher	Statistically significant: 693/813 vs 3337/4274 OR: 1.62, 95%CI [1.32;1.99] (p<0.0001)* *With harm for not being able to talk to teacher*	1, 813 vs 4274	Evans, 2005
Risk factor for auto-mutilation repetition (multiple events)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to teacher	Not statistically significant: 164/199 vs 141/164 § OR: 0.76, 95%CI [0.43;1.35] ¥ (p=0.36)*	1, 199 vs 164	Evans, 2005
Not able to talk to somebody else				
Risk factor for auto-mutilation				
Auto-mutilation	Not able to talk to somebody else	Meta-analysis (see Figure 7) Statistically significant: OR: 1.20, 95%CI [1.01;1.43] I²=63% (p=0.04)* *With harm for not being able to talk to somebody else*	1, 13555	Evans, 2005 Portzky, 2008

Figure 7: Meta-analysis not able to talk to a somebody else as a risk factor for auto-mutilation



Risk factor for thoughts of auto-mutilation				
Thoughts of auto-mutilation	Not able to talk to somebody else	Not statistically significant: 566/810 vs 2831/4233 OR: 1.15, 95%CI [0.98;1.35] ¥ (p=0.096)*	1, 810 vs 4233	Evans, 2005
Risk factor for auto-mutilation repetition (multiple episodes)				
Auto-mutilation repetition (multiple episodes)	Not able to talk to somebody else	Not statistically significant: 139/198 vs 111/169 § OR: 1.23, 95%CI [0.79;1.91] ¥ (p=0.35)*	1, 198 vs 169	Evans, 2005

* Calculations done by the reviewer(s) using Review Manager software
£ No raw data available, effect size and CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Batey, 2010	No	Yes, participants were asked about lifetime self-harm, and not about self-harm within a shorter time frame (i.e. 1 year). Answers could thus be susceptible to bias.	Yes, there was no control for confounding factors	NA No follow-up taken place	-
Evans, 2005	No	No	Yes, there was no control for confounding factors	NA No follow-up taken place	-
Latina, 2015	No	No	Yes, age was included as a confounder – but the age range was only 15-16 years old. No other confounders were included.	Yes, 123 participants (14.8%) were lost to follow-up	-
Portzky, 2008	No	No	Yes, there was no control for confounding factors with regards to the extracted data.	NA No follow-up taken place	-
Watanabe, 2012	No	No	Yes, there was no control for confounding factors	NA No follow-up taken place	-

Certainty of the body of evidence

1. Talking as a coping strategy

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	
Inconsistency	-1	$I^2 = 91\%$

Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

2. Ease of communication with parents

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Lack of data and low number of events
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

3. Not able to talk to mother

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation and thoughts of auto-mutilation have no imprecision; auto-mutilation repetition has imprecision due to low number of events. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	-1	$I^2 = 90\%$
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

4. Not able to talk to father

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation and thoughts of auto-mutilation have no imprecision; auto-mutilation repetition has imprecision due to low number of events. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	-1	$I^2 = 95\%$
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

5. Not able to talk to sibling

	Initial grading Low [C]	Downgrading due to

Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation and thoughts of auto-mutilation have no imprecision; auto-mutilation repetition has imprecision due to low number of events. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	-1	$I^2 = 96\%$
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

6. Able to talk to another relative

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation and thoughts of auto-mutilation have no imprecision; auto-mutilation repetition has imprecision due to low number of events. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

7. Not able to talk to a friend

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Lack of data and large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

8. Not able to talk to a teacher

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation and thoughts of auto-mutilation have no imprecision; auto-mutilation repetition has imprecision due to low number of events and large variability of results. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	

QUALITY (GRADE)	Final grading Very low [D]	

9. Not able to talk to somebody else

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	0	[Auto-mutilation has no imprecision; thoughts of auto-mutilation and auto-mutilation repetition have imprecision due to low number of events and large variability of results. A score of 0 was assigned because the impact on auto-mutilation was considered the priority]
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	Talking as a coping strategy There is limited evidence with benefit for talking as a coping strategy. It was shown that talking as a coping strategy resulted in a statistically significant decreased risk of auto-mutilation compared to not talking as a coping strategy (Meta-analysis 1 Batey 2010, Evans 2005, Watanabe 2012). Evidence is of very low quality. Ease of communication with parents There is limited evidence with benefit for easy communication with parents. It was shown that easy communication with parents resulted in a statistically significant decreased risk of auto-mutilation compared to no easy communication with parents (Latina 2015). Evidence is of very low quality and results cannot be considered precise due to lack of data. Not able to talk to the mother There is limited evidence with harm for not being able to talk to the mother. It was shown that not being able to talk to the mother resulted in a statistically significant increased risk of auto-mutilation (Meta-analysis 2 Evans 2005, Portzky 2008), thoughts of auto-mutilation (Evans 2005), and repetition of auto-mutilation (Evans 2005), compared to being able to talk to the mother. Evidence is of very low quality. Not able to talk to father There is limited evidence with harm for not being able to talk to the father. It was shown that not being able to talk to the father resulted in a statistically significant increased risk of auto-mutilation (Meta-analysis 3 Evans 2005, Portzky 2008) and thoughts of auto-mutilation (Evans 2005). A correlation between not being able to talk to the father and the risk of auto-mutilation repetition (Evans 2005) could not be demonstrated. Evidence is of very low quality. Not able to talk to sibling There is limited evidence with harm for not being able to talk to the sibling. It was shown that not being able to talk to the sibling resulted in a statistically significant increased risk of auto-mutilation (Meta-analysis 4 Evans 2005, Portzky 2008) and thoughts of auto-mutilation (Evans 2005), compared to being able to talk to the sibling. A correlation between not being able to talk to a sibling and the risk of auto-mutilation repetition (Evans 2005) could not be demonstrated. Evidence is of very low quality. Not able to talk to another relative There is limited evidence with harm for not being able to talk to another relative. It was shown that not being able to talk to another relative resulted in a statistically significant increased risk of auto-mutilation (Evans 2005), thoughts of auto-mutilation (Evans 2005), and repetition of auto-mutilation (Evans 2005), compared to being able to talk to another relative. Evidence is of very low quality. Not able to talk to a friend

	There is limited evidence concerning the risk of auto-mutilation, thoughts of auto-mutilation, and auto-mutilation repetition when not able to talk to a friend. A statistically significant increased risk of auto-mutilation (Meta-analysis 5 Evans 2005, Portzky 2008; Latina 2015), thoughts of auto-mutilation (Evans 2005), and auto-mutilation repetition (Evans 2005) when not able to talk to a friend compared to being able to talk to a friend could not be demonstrated. Evidence is of very low quality and results of these studies are imprecise due to lack of data and large variability of results. Not able to talk to a teacher There is limited evidence with harm for not being able to talk to a teacher. It was shown that not being able to talk to a teacher resulted in a statistically significant increased risk of auto-mutilation (Meta-analysis 6 Evans 2005, Portzky 2008) and thoughts of auto-mutilation (Evans 2005). A correlation between not being able to talk to a teacher and the risk of auto-mutilation repetition (Evans 2005) could not be demonstrated. Evidence is of very low quality. Not able to talk to somebody else There is limited evidence with harm for not being able to talk to somebody else. It was shown that not being able to talk to somebody else resulted in a statistically significant increased risk of auto-mutilation (Meta-analysis 7 Evans 2005, Portzky 2008). A correlation between not being able to talk to somebody else and the risk of thoughts of auto-mutilation, or auto-mutilation repetition (Evans 2005) could not be demonstrated. Evidence is of very low quality.
Reference(s)	**Articles** Batey H, May J, Andrade J. *Negative intrusive thoughts and dissociation as risk factors for self-harm.* Suicide and Life-threatening Behavior 2010, 40(1):35-49. Evans E, Hawton K, Rodham K. *In what ways are adolescents who engage in self-harm or experience thoughts of self-harm different in terms of halp-seeking, communication and coping strategies?* Journal of Adolescence 2005, 28: 573-587. Latina D, Giannotta F, Rabaglietti E. *Do friends' co-rumination and communication with parents prevent depressed adolescents from self-harm?* Journal of Applied Developmental Psychology 2015, 41:120-128. Portzky G, De Wilde EJ, van Heeringen K. *Deliberate self-harm in young people: differences in prevalence and risk factors between The Netherlands and Belgium.* Eur Child Adolesc Psychiatry 2008, 17: 179-186. Watanabe N, Nishida A, Shimodera S, Inoue K, Oshima N, Sasaki T, Shimpei I, Akechi T, Furukawa TA, Okazaki Y. *Deliberate self-harm in adolescents aged 12-18: a cross-sectional survey of 18,104 students.* Suicide and Life-Threatening Behavior 2012, 42(5): 550-560.

1.10 Stress

Subtopic	Stress
Intervention	Communication
Question (PICO)	In people who are at high risk for/engage in stress (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing stress (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Risk factor	Remarks
Soo, 2015, Australia	Observational: Cross-sectional study	185 females (mean age 55.98±9.26 years), diagnosed with primary breast cancer	Relevant risk factor: Emotional/informational subscale of MOSS (MOS-E)*	Identified from reference list 'Yu 2015'. Questionnaire included demographics, Multidimensional Rumination Illness Scale (MRIS), Depression, Anxiety and Stress Scale (DASS), Medical Outcomes Social Support Survey (MOS-SS)
Yu, 2015, Australia	Observational: Cross-sectional study	338 women with breast cancer, mean age (SD): 53.5 years (9.22)	Relevant risk factors: Communication avoidance by women and partners	Outcomes were measured once. Survey included demographics + communication avoidance + Depression, Anxiety and Stress Scale (DASS) + coping (Brief COPE) + Physical Well-Being Subscale of Functional Assessment of Cancer Therapy

Synthesis of findings

Outcome	Risk factor	Effect Size	#studies, # participants	Reference
Stress (DASS)	Medical Outcomes Social Support Survey – Emotional/informational subscale (MOS-E)	Not statistically significant: R: -0.14 (p>0.05) †	1, 185 §	Soo 2015
Stress (DASS)	Communication avoidance by women with breast cancer	Statistically significant: R:0.31 (p<0.01) *With harm for communication avoidance by women with breast cancer*	1, 338 §	Yu 2015
	Partner communication avoidance	Statistically significant: R:0.29 (p<0.01) *With harm for partner communication avoidance*		

R: correlation coefficient
† Imprecision (lack of data)
§ Imprecision (limited sample size)

Quality of evidence

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Soo 2015	Yes, only women, who were invited to participate over email: self-selection.	Yes, data collected through questionnaires.	No, multiple regression analysis performed	No, no loss to follow-up	
Yu 2015	Yes, only women.	Yes, data collected through questionnaires	Yes, no multivariate analyses performed for	No, no loss to follow-up	

			anxiety and communication avoidance.		

Certainty of the body of evidence

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size/ lack of data
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	There is limited evidence with harm for communication avoidance. It was shown that there is a statistically significant association between an increase in stress and communication avoidance (Yu 2015). A statistically significant association between an increase in stress and decrease of emotional/informational support could not be demonstrated (Soo 2015). Evidence is of very low quality and results cannot be considered precise due to limited sample size and/or lack of data. No causal relationships can be inferred from these results.
Reference(s)	**Articles** Soo H, Sherman KA. *Rumination, psychological distress and post-traumatic growth in women diagnosed with breast cancer.* Psycho-Oncology 2015, 24:70-79 Yu Y, Sherman KA. *Communication avoidance, coping and psychological distress of women with breast cancer*. J Behav Med 2015, 38:565-577

1.11 Suicide

Topic	Suicide
Intervention	Communication
Question (PICO)	In people who are at high risk for/engage in suicide (P), is communication with family, friends, or somebody else (I) effective for improving mental health and reducing suicide risk (O) compared to not being able to communicate or other forms of communication (C)?

Characteristics of included studies

Author, year, Country	Study design	Population	Comparison/Risk factor	Remarks
Briggs, 2007, UK	Experimental: Before-after study	Nr of participants: 159 people stayed in Maytree, a respite centre for the suicidal, in the past 3 years - 60% female - 40% male Age range: 18-66 years 111 people had a history of at least 1 suicide attempt (70%) 48 people were present at Maytree during the study period. Full data was only obtained for 24 people. [No detailed demographics are available]	<u>Intervention</u> People stay 4 nights in Maytree. During their stay they cannot use alcohol, drugs, or violence (limit setting) Main intervention consists of befriending = opportunities for guests to talk about their life with volunteers/staff (unclear what type of background or training they have) or other guests	Outcomes were measured at baseline (when entering Maytree), post intervention (when leaving Maytree), and at 3 month follow-up. The survey included demographics + the 34-item self-reported CORE questionnaire (clinical outcomes in routine evaluation) which measures psychological distress CORE consists of 4 dimensions: well-being, problems, functioning and risk. The higher the score, the more problems are being reported. It is a measure of current psychological global distress.
Carter, 2005, 2007, 2013, Australia	Experimental: Randomized controlled trial	Nr of participants: 772 people with deliberate self-poisoning - 524 female - 248 male Median (IQR) age: 33 (24-44) years Two cohorts: - Intervention (n=378) - Control (n=394)	<u>Intervention</u> Treatment as usual + postcard sent by doctor to participants at 1, 2, 3, 4, 6, 8, 10, and 12 months after discharge Content of postcard: In these postcards, a doctor asks how the patients are doing and whether they wish to drop a note. <u>Control</u> Treatment as usual	Outcomes were measured at baseline (at hospital discharge), and 1, 2, 3 years after hospital discharge. The survey included demographics + repeat self-poisoning and hospitalization + suicidal death [Suicidal death was only reported at 60 months after hospital discharge]
Harrison, 2010, USA	Observational: Case-control study	Nr of participants: 106 people, from an inpatient psychogeriatric unit and a late-life depression clinic - 50 female - 56 male Mean (±SD) age: 71.0 (±8.2) years Three cohorts: - Suicidal depressed (n=29) - Non-suicidal depressed (n=58) - Non-depressed (n=19) [only data from suicidal depressed and non-suicidal	Relevant risk factor: - Appraisal The ISEL support scale includes appraisal, which means 'the perceived availability of someone to talk to about one's problems'	Outcomes were measured once. The survey included demographics + Interpersonal support evaluation list (ISEL) + Inventory of interpersonal problems (IIP) + structured clinical interview for DSM-IV Axis I Disorders – patient edition

		depressed were extracted]		
Hassanian-Moghaddam, 2011, 2017, Iran	Experimental: Randomized controlled trial	Nr of participants at baseline: 2300 people, who were hospital-treated for self-poisoning Two cohorts: - Intervention (n=1150) - Control (n=1150) Nr of participants at post intervention: 2113 people - 1402 female - 711 male Mean (±SD) age: 24.13 (±8.11) years Two cohorts: - Intervention (n=1043) - Control (n=1070) Nr of participants at 1 year follow-up: 2001 people - 1322 female - 679 male Mean (±SD) age: 24.09 (±8.06) years Two cohorts: - Intervention (n=997) - Control (n=1004)	<u>Intervention</u> Treatment as usual + postcard sent by a doctor to participants at 1, 2, 3, 4, 6, 8, 10, and 12 months after discharge + a birthday card Content of postcard: In these postcards, a doctor asks how the patients are doing and whether they wish to drop a note. They also include an inspiring poem. <u>Control</u> Treatment as usual	Outcomes were measured at baseline (at hospital discharge), and at 1 and 2 years after hospital discharge The survey included demographics + self-harm + suicidal ideation + suicide attempt + suicidal death [Only suicidal ideation, suicide attempt, and suicidal death were extracted]
Hawton, 2002, UK	Observational: Case-control study	Nr of participants: 176 people, all nurses - 176 female - 0 male Age range: 20-59 years Three cohorts: - Suicides with psychological autopsy interview (n=42) - Suicides without psychological autopsy interview (n=50) - Control (n=84) [Only data from the suicides with psychological autopsy interview and control were extracted]	Relevant risk factor: - Having no confidant	Outcomes were measured once. The survey included demographics + coroner information + informant/control interview (psychiatric disorders, demographics, circumstances of death, problems faced at work and home in the year before the death) + Personality Assessment Schedule + ICD-10 mental state
Motto, 1976, 2001, USA	Experimental: Randomized controlled trial	Nr of participants: 3005 people, admitted to a psychiatric in-patient service because of a depressive or suicidal state - 1677 female - 1328 male Mean age: 33.9 years	<u>Intervention</u> Regular communications involving short letter or telephone call from doctor to patients. Treatment as usual + postcard sent to participants at 1, 2, 3, 4, 6, 8, 10, 12, 15, 18, 21, 24, 27, 30, 33, 36,	Outcomes were measured at baseline (at hospital discharge), and at 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15 years after hospital discharge The survey included demographics + suicidal death

		2162 people continued with therapy for at least 1 month after discharge or were lost to follow-up. These people were not included in the study. 843 people declined post-discharge therapy and were randomly assigned to intervention or control. Two cohorts: - Intervention (n=389) - Control (n=454) [Only data from intervention and control were extracted]	39, 42, 45, 48, 51, 54, 57, 60 months after discharge Content of postcard: Expression of concern + invite to send a response + IF a response was received an answer was provided. <u>Control</u> Passive control group	
Szanto, 2012, USA	Observational: Case-control study	Nr of participants: 90 people, recruited from an inpatient psychogeriatric unit and in a late-life depression clinic - 51 female - 39 male Mean (±SD) age: 69.5 (±7.5) years Three cohorts: - Suicidal (n=24) - Non-suicidal depressed (n=38) - Non-psychiatric control (n=28) [only data from suicidal depressed and non-suicidal depressed were extracted]	Relevant risk factor: - Appraisal The ISEL support scale includes appraisal, which means 'the perceived availability of someone to talk to about one's problems'	Outcomes were measured once. The survey included demographics + SCID-IV + HRSD-16 + Antidepressant Treatment History Form + Cumulative Illness Rating Scale (Geriatrics) + Suicidal Intent Scale + Beck's Lethality Scale + RME + Social Network Index + Interpersonal support evaluation list (ISEL) + Inventory of interpersonal problems (IIP) + RSPI-R + MMSE + DRS + EXIT25
Vanyukov, 2017, USA	Observational: Case-control study	Nr of participants: 165 people, all suicidal depressed - 75 female - 90 male Mean (±SD) age: 65.1 (±9.2) years Five cohorts: - Depressed suicide attempters, high lethality (n=32) - Depressed suicide attempters, low lethality (n=32) - Depressed ideators (n=34) - Non-suicidal depressed (n=37) - Non-psychiatric controls (n=30) [Data from non-psychiatric controls were not extracted] [Data from depressed suicide attempters with high and low lethality, and from suicide ideators were	Relevant risk factor: - Appraisal The ISEL support scale includes appraisal, which means 'the perceived availability of someone to talk to about one's problems'	Outcomes were measured once. The survey included demographics + Interpersonal Needs Questionnaire + NEO Five-Factor Inventory + Anger Rumination Scale + Inventory of Interpersonal Problems (IIP) + Barratt Impulsiveness Scale + Interpersonal support evaluation list (ISEL)

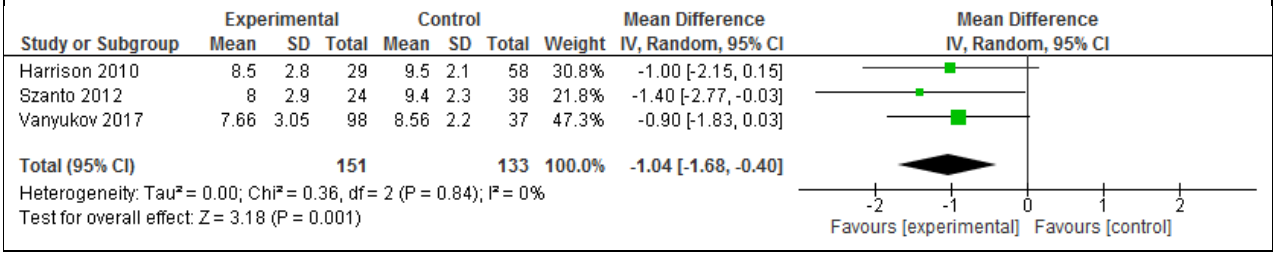
		pooled]		

Synthesis of findings

Outcome	Comparison/Risk factor	Effect Size	#studies, # participants	Reference
Sending a postcard				
Suicidal death after 1 year of intervention	Intervention vs control	Not statistically significant: 7/1043 vs 2/1070 § RR: 3.59, 95% CI [0.75;17.24] ¥ (p=0.11)*	1, 1043 vs 1070	Hassanian-Moghaddam, 2017
		Not statistically significant: 4/389 vs 10/454 § RR: 0.47, 95% CI [0.15;1.48] ¥ (p=0.19)*	1, 389 vs 454	Motto, 2001
Suicidal death after 2 years of intervention		Not statistically significant: 7/389 vs 16/454 § RR: 0.51, 95% CI [0.21;1.23] ¥ (p=0.13)*		
Suicidal death after 3 years of intervention		Not statistically significant: 9/389 vs 19/454 § RR: 0.55, 95% CI [0.25;1.21] ¥ (p=0.14)*		
Suicidal death after 4 years of intervention		Not statistically significant: 11/389 vs 21/454 § RR: 0.61, 95% CI [0.30;1.25] ¥ (p=0.18)*		
Suicidal death after 5 years of intervention		Not statistically significant: 15/389 vs 21/454 § RR: 0.83, 95% CI [0.44;1.59] ¥ (p=0.58)*		
Suicidal death at 1 year follow-up		Not statistically significant: 8/997 vs 5/1004 § RR: 1.61, 95% CI [0.53;4.91] ¥ (p=0.40)*	1, 997 vs 1004	Hassanian-Moghaddam, 2017
		Not statistically significant: 17/389 vs 22/454 § RR: 0.90, 95% CI [0.49;1.67] ¥ (p=0.74)*	1, 389 vs 454	Motto, 2001
Suicidal death at 2 years follow-up		Not statistically significant: 17/389 vs 25/454 § RR: 0.79, 95% CI [0.44;1.45] ¥ (p=0.45)*		
Suicidal death at 3 years follow-up		Not statistically significant: 18/389 vs 25/454 § RR: 0.84, 95% CI [0.47;1.52] ¥ (p=0.56)*		
Suicidal death at 4 years follow-up		Not statistically significant: 18/389 vs 25/454 § RR: 0.84, 95% CI [0.47;1.52] ¥ (p=0.56)*		
		Not statistically significant: 5/378 vs 6/394 § RR: 0.87, 95% CI [0.27;2.82] ¥ (p=0.81)*	1, 378 vs 394	Carter, 2013
Suicidal death at 5 years follow-up		Not statistically significant: 19/389 vs 25/454 § RR: 0.89, 95% CI [0.50;1.59] ¥ (p=0.69)*	1, 389 vs 454	Motto, 2001
Suicidal death at 6 years follow-up		Not statistically significant: 21/389 vs 25/454 § RR: 0.98, 95% CI [0.56;1.72] ¥ (p=0.95)		
Suicidal death at 7 years follow-up		Not statistically significant: 21/389 vs 26/454 § RR: 0.94, 95% CI [0.54;1.65] ¥ (p=0.84)*		

Suicidal death at 8 years follow-up		Not statistically significant: 21/389 vs 26/454 § RR: 0.94, 95% CI [0.54;1.65] ¥ (p=0.84)*		
Suicidal death at 9 years follow-up		Not statistically significant: 23/389 vs 26/454 § RR: 1.03, 95% CI [0.60;1.78] ¥ (p=0.91)*		
Suicidal death at 10 years follow-up		Not statistically significant: 25/389 vs 26/454 § RR: 1.12, 95% CI [0.66;1.91] ¥ (p=0.67)*		
Any suicide ideation post intervention		Statistically significant: 302/1043 vs 446/1070 RR: 0.69, 95% CI [0.62;0.78] (p<0.0001)* *In favour of sending postcards*	1, 1043 vs 1070	Hassanian-Moghaddam, 2011
Any suicide ideation at one year follow-up		Statistically significant: 465/997 vs 588/1004 RR: 0.80, 95% CI [0.73;0.87] (p<0.0001)* *In favour of sending postcards*	1, 997 vs 1004	Hassanian-Moghaddam, 2017
Any suicide attempt post intervention		Statistically significant: 31/1043 vs 55/1070 § RR: 0.58, 95% CI [0.38;0.89] (p=0.01)* *In favour of sending postcards*	1, 1043 vs 1070	Hassanian-Moghaddam, 2011
Any suicide attempt at one year follow-up		Statistically significant: 62/997 vs 91/1004 § RR: 0.69, 95% CI [0.50;0.94] (p=0.02)* *In favour of sending postcards*	1, 997 vs 1004	Hassanian-Moghaddam, 2017
Befriending (+ staying at a guest house for 4 nights)				
Psychological distress (CORE scale)	Post vs pre	Statistically significant: 1.35±0.57 vs 2.77±0.58 MD: -1.42*£ (p<0.001) *In favour of befriending*	1, 24 §	Briggs, 2007
	Follow-up vs pre	Statistically significant: 1.12±0.75 vs 2.77±0.58 MD: -1.65*£ (p<0.001) *In favour of befriending*		
	Follow-up vs post	Not statistically significant: 1.12±0.75 vs 1.35±0.57 MD: -0.23*£† (p=0.16)		
Appraisal/Having a confidant *Appraisal = The perceived availability of someone to talk to about one's problems*				
Suicidality	Appraisal	Meta-analysis (see Figure 1) Statistically significant: MD: -1.04, 95% CI [-1.68;-0.40] (p=0.001)* *With benefit from appraisal*	3, 284 (151 cases vs 133 controls) §	Harrison, 2010 Szanto, 2012 Vanyukov, 2017

Figure 1: Meta-analysis appraisal as a risk factor for suicidality



Suicide	Not having a confidant	Not statistically significant: 3/40 vs 0/84 § RR: 14.5, 95% CI [0.77;274.4] ¥ (p=0.07)*	1, 124 (40 cases vs 84 controls)	Hawton, 2001

Mean ± SD (unless otherwise indicated), MD: mean difference, RR: risk ratio, SD: standard deviation
* Calculations done by the reviewer(s) using Review Manager software
£ Paired data, CI cannot be calculated.
¥ Imprecision (large variability of results)
† Imprecision (lack of data)
§ Imprecision (limited sample size or low number of events)

Quality of evidence

Experimental studies

Author, Year	Lack of allocation concealment	Lack of blinding	Incomplete accounting of outcome events	Selective outcome reporting	Other limitations
Briggs, 2007	Not applicable This is an uncontrolled before-after study.	Not applicable This is an uncontrolled before-after study.	Yes Of the 48 guests who stayed in Maytree during the intervention period, 41 completed the questionnaire at baseline and post intervention. Only 24 were assessed at follow-up.	Yes Only impact on CORE questionnaire was measured. No information on suicide ideation, suicide attempts or suicidal deaths.	/
Carter, 2005, 2007, 2013	Lack of randomization: No Lack of allocation concealment: Yes	Yes Participants: Yes Personnel: No Outcome assessors: No	No ITT analyses were performed.	No	/
Hassanian-Moghaddam, 2011, 2017	Lack of randomization: No Lack of allocation concealment: Yes	Yes Participants: Yes Personnel: No Outcome assessors: Yes	Yes At baseline 2300 participants, post intervention 2113 people, at follow-up 2001 people. No ITT analysis performed.	No	/
Motto, 1976, 2001	Lack of randomization: No Lack of allocation concealment: Unclear	Unclear Participants: Unclear Personnel: Unclear Outcome assessors: Unclear	Unclear	No	p-value in article was significant. RR calculated in RevMan was not significant For uniformity across the ES, we chose to use the p-value as calculated in RevMan

Observational studies

Author, Year	Inappropriate eligibility criteria	Inappropriate methods for exposure and outcome variables	Not controlled for confounding	Incomplete or inadequate follow-up	Other limitations
Harrison, 2010	No. Participants were	No.	Yes. Data not controlled for	Not applicable. Outcomes measured	/

	matched for age, gender and education.		confounding.	only once.	
Hawton, 2002	No. Participants were matched for age and gender.	Yes. In case of suicides, the data was obtained from an informant (someone close to the person who committed suicide), but not from the suicidal person themselves.	Yes. Data not controlled for confounding.	Not applicable. Outcomes measured only once.	p-value in article was significant. RR calculated in RevMan was not significant For uniformity across the ES, we chose to use the p-value as calculated in RevMan
Szanto, 2012	No. Participants were matched for age, gender and education.	No.	Yes. Data not controlled for confounding.	Not applicable. Outcomes measured only once.	/
Vanyukov, 2017	No. Participants were matched for age, gender and education.	No.	Yes. Data not controlled for confounding.	Not applicable. Outcomes measured only once.	/

Certainty of the body of evidence

1. Sending postcards

	Initial grading high [A]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Low number of events, large variability of results
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Low [C]**	

2. Befriending (+staying at a guest house for 4 nights)

	Initial grading High [A]	Downgrading due to
Limitations of study design	-2	See table 'Quality of evidence' Downgraded with 2 levels because of lack of control group and additional limitations
Imprecision	-1	Limited sample size and lack of data due to paired data.
Inconsistency	0	
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

3. Appraisal/having a confidant

	Initial grading Low [C]	Downgrading due to
Limitations of study design	-1	See table 'Quality of evidence'
Imprecision	-1	Limited sample size, low number of events,

		large variability of results
Inconsistency	0	Meta-analysis appraisal is significant and I^2 = 0%. Having a confidant is borderline not significant but with a very large 95% CI. This is similar to the appraisal articles.
Indirectness	0	
Publication bias	0	
		Upgrading due to
Large magnitude of effect	0	
Dose-response gradient	0	
Plausible confounding	0	
QUALITY (GRADE)	**Final grading Very low [D]**	

Conclusion	Sending postcards There is limited evidence in favour of sending postcards. [After hospital discharge, postcards are sent every few weeks or months. In these postcards, a doctor asks how the patients are doing and whether they wish to drop a note.] It was shown that sending postcards resulted in a statistically significant decrease of suicide ideation and suicide attempts, compared to not sending postcards (Hassanian-Moghaddam 2011, Hassanian-Moghaddam 2017). A statistically significant decrease of suicidal death, when sending postcards compared to not sending postcards, could not be demonstrated (Carter 2005, Carter 2007, Carter 2013, Hassanian-Moghaddam 2011, Hassanian-Moghaddam 2017, Motto 1976, Motto 2001). Evidence is of low quality and results cannot be considered precise due to low number of events and large variability of results. Befriending (+ staying at a guest house for 4 nights) There is limited evidence in favour of befriending. It was shown that befriending resulted in a statistically significant decrease of psychological distress from pre to post and follow-up measurement (Briggs, 2007). Evidence is of very low quality and results cannot be considered precise due to limited sample size and lack of data. Appraisal/having a confidant There is limited evidence with benefit for appraisal (i.e. 'the perceived availability of someone to talk to about one's problems')/having a confidant. It was shown that appraisal/having a confidant resulted in a statistically significant decreased risk of suicidality, compared to low appraisal/ not having a confidant (Harrison 2010; Szanto 2012; Vanyukov 2017; Hawton 2001). Evidence is of very low quality and results cannot be considered precise due to limited sample size, low number of events and large variability of results
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