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Meta-Analysis: The Effect of Social Capital on Depression in Elderly

Amanda Widyarahma[1)], Naili Zahroton Mufidah[1)], Agil Rafi'ah Afandi[1)], Bhisma Murti[1)], Aem Ismail[2)]

[1)]Master's Program in Public Health, Universitas Sebelas Maret
[2)]Study Program in Medical Record and Health Information, Health Polytechnics of Insan Husada, Surakarta

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ABSTRACT

Background: According to WHO (2022), 14% of adults >60 years live with depression which accounts for 10.6% of total disability in the elderly. Depression is associated with an increased risk of premature death, with a potential reduction in life expectancy of around 10 years. Studies report that strengthening social capital can be an effective strategy in preventing and managing depression in the elderly. This study aims to analyze the influence of social capital on depression in the elderly.
Subjects and Method: This research is a meta-analysis of the PICO model. Population: elderly. Intervention: high social participation, high social cohesion, high reciprocity, high social trust and high social network. Comparison: low social participation, low social cohesion, low reciprocity, low social trust and low social network. Outcome: depression. The data used involves Google Scholar, PubMed, BMC, Elsevier, ScienceDirect, and Springer Link. Inclusion criteria were full-text articles with a cross-sectional study design using multivariate analysis that included OR values and were published from 2014-2023. Data analysis using the Review Manager 5.3 application.
Results: The meta-analysis included 17 cross-sectional studies from Korea, Spain, Japan, Taiwan, the Netherlands, China, and Myanmar. The results showed that the incidence of depression decreased with high social participation (aOR= 0.78; 95% CI= 0.61–1.00; p= 0.050), high social cohesion (aOR= 0.84; 95% CI= 0.72 – 0.99; p= 0.030), high reciprocity (aOR= 0.75; 95% CI= 0.63 – 0.90; p= 0.020), and high social trust (aOR= 0.52; 95% CI= 0.41 – 0.66; p<0.001). Social networks reduce the risk of depression but were not statistically significant a(OR= 0.71; CI 95%= 0.31 – 1.59; p= 0.400).
Conclusion: Social participation, social cohesion, reciprocity, and social trust have an effect on reducing the risk of depression in the elderly.
Keywords: Social capital, social participation, social cohesion, reciprocity, social trust, social network, depression, elderly.

Correspondence:
Amanda Widyarahma. Master's Program in Public Health, Universitas Sebelas Maret. Jl. Ir. Sutami 36A, Surakarta 57126, Central Java. Email: awidyarahma@gmail.com. Mobile: 081331762238.

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BACKGROUND

According to the World Health Organization (WHO), more than 1 billion people worldwide are currently aged over 60 years, and this number is projected to increase to 1.4 billion by 2030. Alongside this demographic shift, depression has emerged as one of the most prevalent psychiatric disorders globally and is predicted to become the leading cause of disease burden by 2030 (WHO, 2022). Depression in older adults is not only common but also particularly concerning, as it significantly increases the risk of premature death, with studies showing a reduction in life expectancy of approximately 10 years (Gianfredi et al., 2021). In addition to physical and psychological vulnerabilities, the elderly population often faces social challenges, such as increased social isolation—a growing public health concern (Cheng, 2021).

One concept increasingly recognized for its relevance to the mental health of older adults is social capital, which encompasses social participation, cohesion, trust, reciprocity, and networks (Xin & Ren, 2020). Social capital reflects both the quantity and quality of social interactions and the perceived support and trust individuals have within their communities. In older age, significant life transitions such as retirement, loss of a spouse, and shifts in social roles often lead to reduced social engagement and support, placing the elderly at greater risk for mental health issues (Bae et al., 2023).

Social participation plays a pivotal role in mental well-being. Elderly individuals who lack involvement in community or social activities are more likely to experience depressive symptoms compared to those who actively participate, as social engagement promotes communication, a sense of purpose, and better adaptation to aging (Liu et al., 2022). Furthermore, low social cohesion has been identified as a significant risk factor for depression, linked to unfavorable socio-economic and environmental conditions (Generaal, 2019). The element of reciprocity, or the mutual exchange of support, also contributes to better psychological outcomes; seniors who both give and receive support report fewer depressive symptoms and a greater sense of value and belonging (Van et al., 2021).

Trust within the community, particularly with neighbors, fosters a sense of safety and psychological security, which in turn helps protect against depression (Bai et al., 2020). Conversely, limited social networks and reduced access to supportive relationships during decision-making processes are associated with higher rates of depression in older adults. A strong social network, especially involving family, has been shown to be a protective factor against depression in later life (Gianfredi et al., 2021).

This study aims to examine the influence of social capital on depression among the elderly, with the goal of understanding how various social factors contribute to mental health outcomes in older age. By identifying key elements of social capital that protect against depression, this research seeks to inform strategies for improving well-being and reducing mental health disparities among aging populations.

SUBJECTS AND METHOD

1. Study Design

This study is a systematic review and meta-analysis guided by the PRISMA flow diagram. The databases used involve Google Scholar, PubMed, BMC, Science-Direct, Elsevier, and Springer Link. The keywords used are “social capital” AND “social participation” AND “social cohesion” AND “social trust” AND “reciprocity”

AND “social network” AND “depression” AND “cross sectional” AND “OR”.

2. Population and Sample

The author developed inclusion criteria, namely English language articles with cross-sectional studies and case-control studies published between 2014-2023. The analysis used was multivariate analysis with odds ratio (OR). The research subjects were elderly, and the results analyzed were the risk of depression. The exclusion criteria in this study were cohort studies, RCT studies (Randomized Controlled Trials), quasi-experiments, research protocols, preliminary studies, and non-full text articles.

3. Study Variables

The article search was carried out by considering the eligibility criteria determined using the PICO model with the population in the study being elderly; interventions namely high social participation, high social cohesion, high social trust, high reciprocity, and high social network; comparison, namely low social participation, low social cohesion, low social trust, low reciprocity, and low social network; The outcome is depression.

4. Operational Definition of Variables

Social participation is the involvement of individuals or groups in social, economic, political, or cultural activities in society. This includes various actions such as participating in an activity.

Social cohesion is a concept that refers to the strength and resilience of social relationships in a society. This includes the level of trust, solidarity and interdependence between communities.

Social trust is the trust that an individual has in other people or society.

Reciprocity is a principle or concept where individuals or groups provide mutual benefits or support to each other in a relationship.

Social network is a social structure consisting of individuals or entities connected through various types of relationships, such as social interactions, friendships, or social networks.

5. Research Measuring Tools

Primary studies that have been screened were then included to critical appraisal or study review to determine eligibility. The assessment instrument used the Critical Appraisal Cross-sectional Study for Meta-analysis Research published by the Master Program in Public Health, Universitas Sebelas Maret, Surakarta.

6. Data analysis

Article search results were collected with the help of the PRISMA diagram. Primary articles that met the inclusion criteria were analyzed using the RevMan 5.3 application to calculate effect size and study heterogeneity. The results of data processing are represented as (OR, 95% confidence interval, and p value) using the Mantel-Haenszel method for meta-analysis and presented in the form of forest plots and funnel plots.

RESULTS

1. Sample Characteristics

The baseline data yielded 2,030 potentially relevant articles. The PRISMA flow diagram of the literature search and the results are reported in Figure 1 Based on the selection criteria, a total of 1,153 articles were identified for further full text assessment. In this study, data collection was carried out using 6 online databases and the results obtained were 17 articles, according to the PRISMA diagram Figure 1.

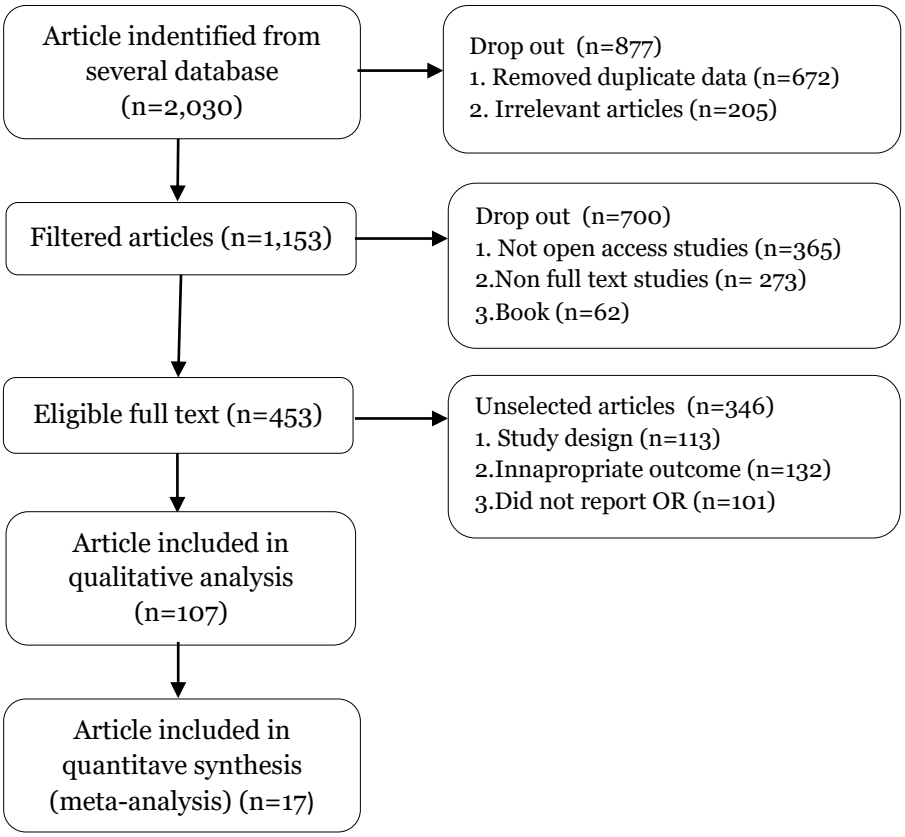

Figure 1. PRISMA Flowchart

Figure 2. Map of Meta-Analysis Research Locations

Table 1. Critical Appraisal for cross-sectional studies in meta-analysis

Primary Study	Criteria													Total
	1a	1b	1c	1d	2a	2b	3a	3b	4	5	6a	6b	7	
Jeong et al., 2022	2	2	2	2	1	1	1	2	2	2	1	2	2	22
Ivan et al., 2019	2	2	2	1	2	1	2	2	1	2	2	2	2	23
Sato et al., 2022	2	2	2	2	1	1	2	2	2	2	2	2	1	23
Zhou et al., 2022	2	2	2	2	2	1	1	2	2	2	2	2	1	23
Lin et al., 2023	2	2	2	2	2	1	2	1	2	1	2	2	2	23
Abella et al., 2017	2	2	2	2	2	1	2	2	2	2	2	2	2	25
Yamaguchi et al., 2019	2	2	2	2	2	1	1	2	1	2	2	2	2	23
Gianfredi et al., 2021	2	2	2	2	2	1	2	2	2	2	2	2	1	24
Wang et al.,2023	2	2	2	2	2	2	2	2	2	2	2	2	2	26
Cho et al.,2021	2	2	2	2	2	1	2	2	1	2	2	2	2	23
Choi et al.,2020	2	2	2	2	2	1	2	2	1	2	1	2	1	22
Generaal et al., 2019	2	2	2	2	2	1	2	2	1	2	2	2	1	23
Hall et al.,2017	2	2	2	2	1	2	2	2	2	2	2	2	1	24
Li et al.,2017	2	2	2	2	2	1	1	2	2	2	1	2	2	23
Murayama et al.,2014	2	2	2	2	1	1	2	2	2	2	1	2	1	22
Han et al.,2018	2	2	2	2	1	2	1	2	2	1	2	2	2	23
Deu et al., 2015	2	2	2	2	1	1	2	1	2	2	2	2	2	23
Li et al.,2017	2	2	2	2	1	1	1	2	2	2	1	2	2	22
Murayama et al.,2014	2	2	2	1	2	1	2	2	1	2	2	2	2	23
Han et al.,2018	2	2	2	2	1	1	2	2	2	2	2	2	1	23

Description of the questions criteria:

1. Formulation of research questions in the acronym of PICO

a. Is the population in the primary study the same as the population in the PICO meta-analysis?

b. Is the operational definition of intervention, namely the exposed status in the primary study, the same as the definition intended in the meta-analysis?

c. Is the comparison, namely the unexposed status used by the primary study, the same as the definition intended in the meta-analysis?

d. Are the outcome variables examined in the primary studies the same as the definitions intended in the meta-analysis?

2. Methods for selecting research subjects

a. In analytical cross-sectional studies, do researchers choose samples from the population randomly?

b. As an alternative, if in a cross-sectional analytical study the sample is not selected randomly, do the researchers select the sample based on outcome status or based on intervention status?

3. Methods for measuring exposure (intervention) and outcome variables

a. Are the exposure and outcome variables measured with the same instruments (measuring tools) in all primary studies?

b. If the variable is measured on a categorical scale, are the cutoffs or categories used the same across primary studies?.

4. Design-related bias

If the sample was not selected randomly, has the researcher made efforts to prevent bias in selecting research subjects? For example, selecting subjects based on outcome status is not affected by exposure status (intervention), or selecting subjects based on exposure status (intervention) is not affected by outcome status.

5. Methods to control confounding

Have primary study researchers made efforts to control the influence of confounding? (for example, conducting a multivariate analysis to control for the influence of a number of confounding factors).

6. Statistical analysis methods

a. Do the researchers analyze the data in this primary study using a multivariate analysis model? (e.g., multiple linear or logistic regression)
b. Do the primary study report effect sizes or associations resulting from the multivariate analysis? (e.g., adjusted OR, adjusted regression coefficient)

7. Conflict of interest

Is there no possibility of a conflict of interest with the research sponsor, which could cause bias in concluding the research results?

Question scores:

0 = No 1= Uncertain 2 = Yes

Table 2. PICO Cross-sectional article on the effect of social participation on depression in the elderly.

Author (Year)	Country	Sample	P	I	C	O
Jeong et al., 2022	Korea	39,390	Elderly	1. High social participation 2. High social trust 3. High social network	1. Low social participation 2. Low social trust 3. Low social network	Depression
Ivan et al., 2019	Spain	8,175	Elderly	1. High social network	1. Low social network	Depression
Sato et al., 2022	Japan	4,131	Elderly	1. High social participation 2. High social cohesion 3. High Reciprocity	1. Low social participation 2. Low social cohesion 3. Low reciprocity	Depression
Zhou et al., 2022	Japan	426	Elderly	1. High social participation 2. High Reciprocity 3. High social trust 4. High social network	1. Low social participation 2. Low reciprocity 3. Low social trust 4. Low social network	Depression
Lin et al., 2023	Taiwan	981	Elderly	1. High social network	1. Low social network	Depression
Abella et al., 2017	Spain	3,535	Elderly	1. High social network	1. Low social network	Depression
Yamaguchi et al., 2019	Japan	7,424	Elderly	1. High social cohesion 2. High Reciprocity	1. Low social network 2. Low reciprocity	Depression
Gianfredi et al., 2021	Netherlands	2,465	Elderly	1. High social participation	1. Low social participation	Depression
Wang et al.,2023	China	19,816	Elderly	1. High social participation	1. Low social participation	Depression
Cho et al.,2021	Myanmar	221	Elderly	1. High social participation	1. Low social participation	Depression
Choi et al.,2020	Korea	421	Elderly	1. High social participation	1. Low social participation	Depression
Generaal et al., 2019	Netherlands	32,487	Elderly	1. High social cohesion	1. Low social network	Depression
Hall et al.,2017	Germany	1,068	Elderly	1. High social cohesion 2. High social trust	1. Low social network 2. Low social trust	Depression
Li et al.,2017	China	2,570	Elderly	1. High social cohesion 2. High Reciprocity 3. High social trust	1. Low social network 2. Low reciprocity 3. Low social trust	Depression
Murayama et al.,2014	Japan	6,416	Elderly	1. High social cohesion 2. High social trust	1. Low social network 2. Low social trust	Depression

Author (Year)	Country	Sample	P	I	C	O
Han et al.,2018	Korea	5,969	Elderly	1. High reciprocity 2. High social trust	1. Low reciprocity 2. Low social trust	Depression
Deu et al., 2015	Spain	4,988	Elderly	1. High social network	1. Low social network	Depression

Table 3. Odds Ratio (OR) and 95% Confidence Interval (95%CI) Data on the Effect of Social Participation on Depression

Author (Year)	OR	CI 95%	
		Upper Limit	Lower Limit
Jeong et al., 2022	0.61	0.62	0.59
Sato et al., 2022	1.05	0.95	1.16
Zhou et al., 2022	1.31	0.42	4.10
Gianfredi et al., 2021	0.83	1.29	0.53
Wang et al.,2023	0.92	0.86	0.98
Cho et al.,2021	0.70	1.02	0.48
Choi et al.,2020	0.60	0.51	0.71

Table 3 presents an overview of 7 main articles with cross sectional studies included in the meta-analysis of the influence of social participation on depression with a sample size of 66,870 samples and presents the odds ratio (aOR) with a 95% confidence interval (95%CI) of the influence of social participation on depression in advanced age of each primary study conducted meta-analysis.

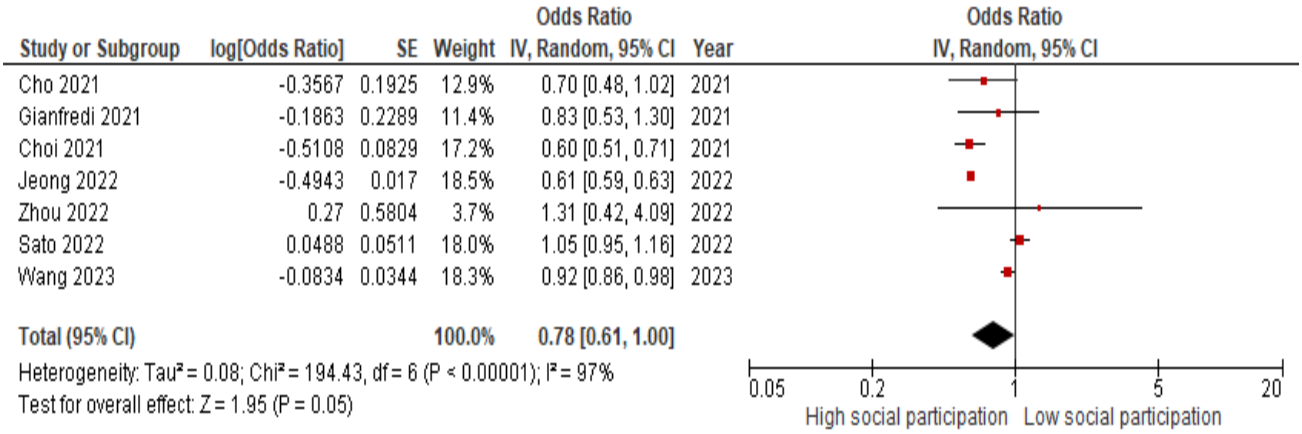

Figure 3. Forest Plot of the Effect of Social Participation on Depression

Figure 3 presents a forest plot regarding the influence of social participation on depression in the elderly. The research results showed that high social participation reduces the risk of depression, and this effect was statistically significant (aOR = 0.78; 95% CI = 0.61 to 1.00; p= 0.050). The forest plot also showed huge heterogeneity of estimates between studies (I^2= 97%). Thus, the calculation of the average estimated effect was carried out using a random effect model approach.

Figure 4 shows a funnel plot regarding the influence of social participation on the risk of depression. The funnel plot shows that the effect estimates are distributed equally to the right and left of the average vertical line. Thus, the funnel plot indicates the absence of publication bias.

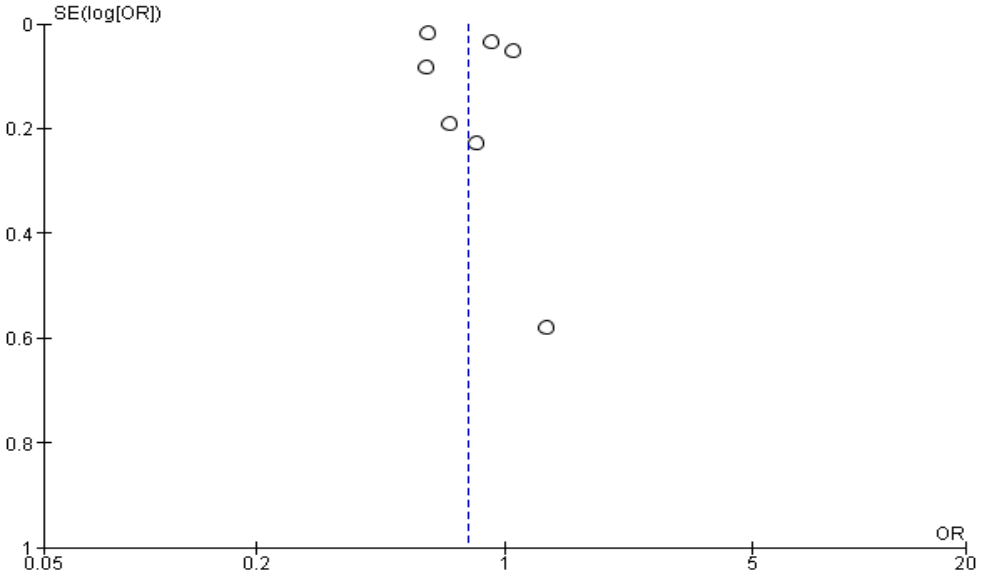

Figure 4. Funnel Plot of the Effect of Social Participation on Depression

Table 4 presents an overview of 6 main articles with cross sectional studies included in the meta-analysis of the influence of social cohesion on depression with a sample size of 54,096 samples and presents the odds ratio (aOR) and 95% confidence interval (95%CI) of the influence of social cohesion on depression in advanced age of each primary study conducted meta-analysis.

Table 4. Odds Ratio (OR) and 95% Confidence Interval (95%CI) data on the influence of social cohesion on depression

Author (Year)	OR	CI 95%	
		Upper Limit	Lower Limit
Sato et al., 2022	1.04	0.97	1.11
Yamaguchi et al., 2019	0.77	0.73	0.80
Generaal et al., 2019	0.97	0.89	1.05
Hall et al.,2017	0.26	0.43	0.16
Li et al.,2017	1.01	1.25	0.81
Murayama et al.,2014	0.85	0.76	0.96

Figure 5 presents a forest plot regarding the influence of social cohesion on depression in the elderly. The results showed that high social cohesion reduced the risk of depression, and this effect was statistically significant (aOR= 0.84, 95% CI= 0.72 to 0.99, p= 0.030). The forest plot also shows large heterogeneity of estimates between studies (I^2= 94%). Thus, the calculation of the average estimated effect was carried out using a random effect model approach.

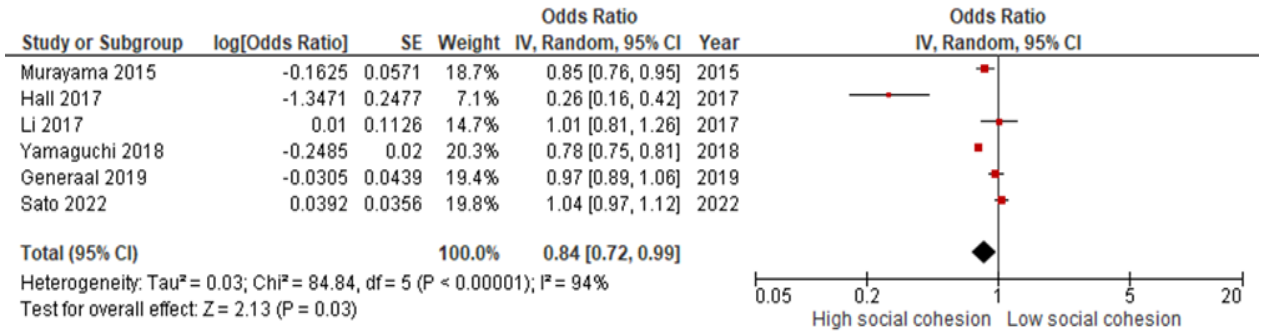

Figure 5. Forest Plot of the Effect of Social Cohesion on Depression

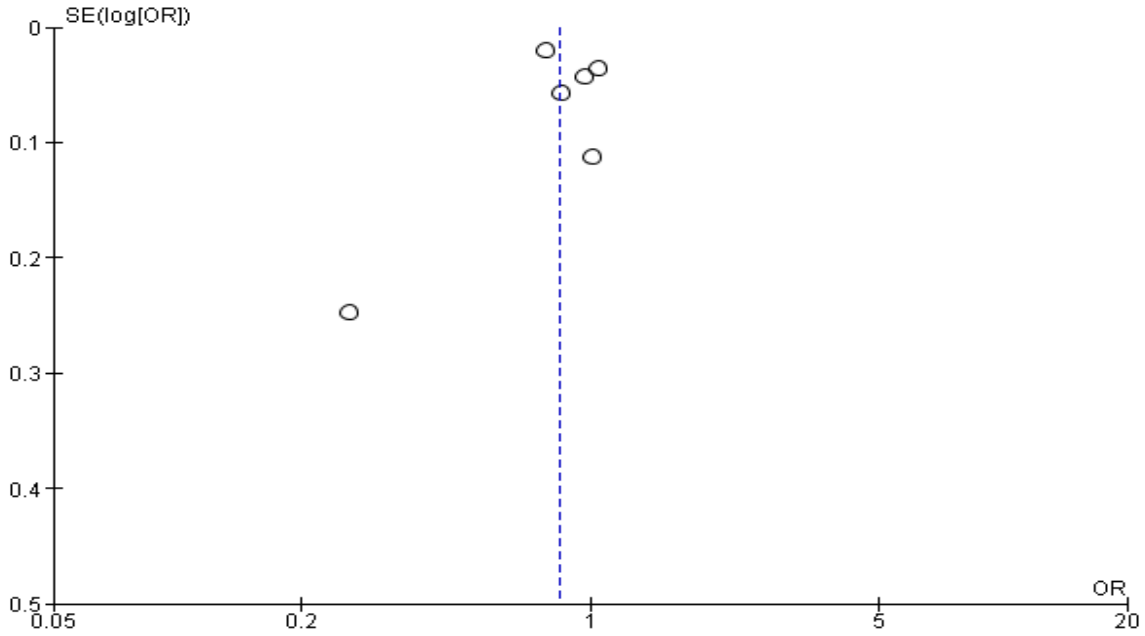

Figure 6. Funnel Plot of the Effect of Social Cohesion on Depression

Figure 6 shows a funnel plot regarding the influence of social cohesion on the risk of depression. The funnel plot shows that the effect estimates are distributed equally to the right and left of the average vertical line. Thus, the funnel plot indicates the absence of publication bias.

Table 5. Data on Odds Ratio (OR) and 95% Confidence Interval (95%CI) The Effect of Reciprocity on Depression

Author (Year)	OR	CI 95%	
		Upper Limit	Lower Limit
Sato et al., 2022	0.92	0.87	0.97
Zhou et al., 2022	2.97	1.30	6.81
Yamaguchi et al., 2019	0.88	0.85	0.91
Li et al.,2017	0.46	0.5	0.33
Han et al.,2018	0.52	0.62	0.44

Table 5 presents an overview of 5 main articles with cross sectional studies included in the meta-analysis of the influence of reciprocity on depression with

a sample size of 20,520 samples and presents the odds ratio (aOR) and 95% confidence interval (95%CI) of the influence of social participation on depression in the elderly from each primary study that was meta-analyzed.

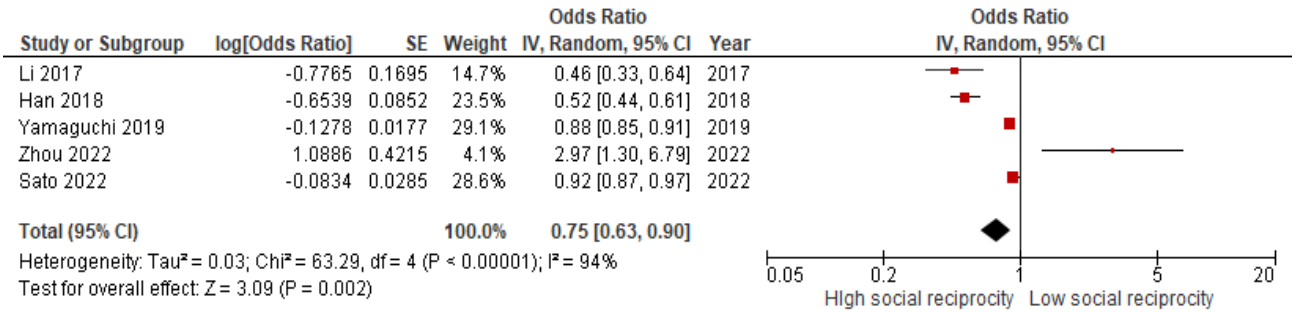

Figure 7. Forest Plot of the Effect of Reciprocity on Depression

Figure 7 presents a forest plot regarding the influence of reciprocity on depression in the elderly. The results showed that high reciprocity reduced the risk of depression, and this effect was statistically significant (aOR = 0.75; 95% CI= 0.63 to 0.90; p=0.002). The forest plot also shows large heterogeneity of estimates between studies (I^2= 94%). Thus, the calculation of the average estimated effect is carried out using a random effect model approach.

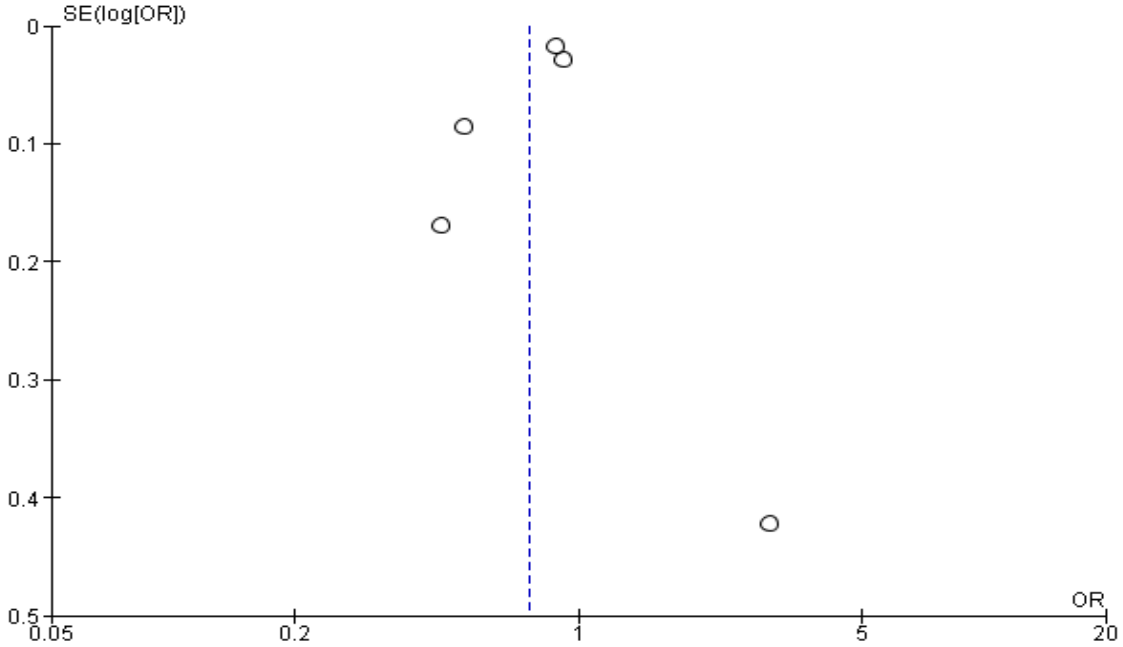

Figure 8. Funnel Plot of the Effect of Reciprocity on Depression

Figure 8 presents a funnel plot of the effect of reciprocity on depression. The funnel plot shows that the distribution of effect estimates is located more to the left than to the right of the vertical line of average estimates. Thus, the funnel plot indicates publication bias. Because the distribution of estimated effects is more to the left of the vertical line of estimated averages in the funnel plot, which is the

same as the diamond image of the estimated average effect to the left of the vertical line of hypothesis 0 in the forest plot, the publication bias tends to reduce true reciprocity effect (underestimated).

Table 6 presents an overview of 6 main articles with cross sectional studies included in the meta-analysis of the influence of social trust on depression with a sample size of 55,839 and presents the odds ratio (aOR) and 95% confidence interval (95%CI) of the influence of social trust on depression at age further from each primary study that was carried out meta-analysis.

Table 6. Odds Ratio (OR) and 95% Confidence Interval (95%CI) data on the influence of social trust on depression

Author (Year)	OR	CI 95%	
		Upper Limit	Lower Limit
Jeong et al., 2022	0.40	0.41	0.39
Zhou et al., 2022	0.70	0.29	1.67
Hall et al.,2017	0.52	0.83	0.32
Li et al.,2017	0.46	0.60	0.36
Murayama et al.,2014	0.53	0.46	0.62
Han et al.,2018	0.69	0.80	0.59

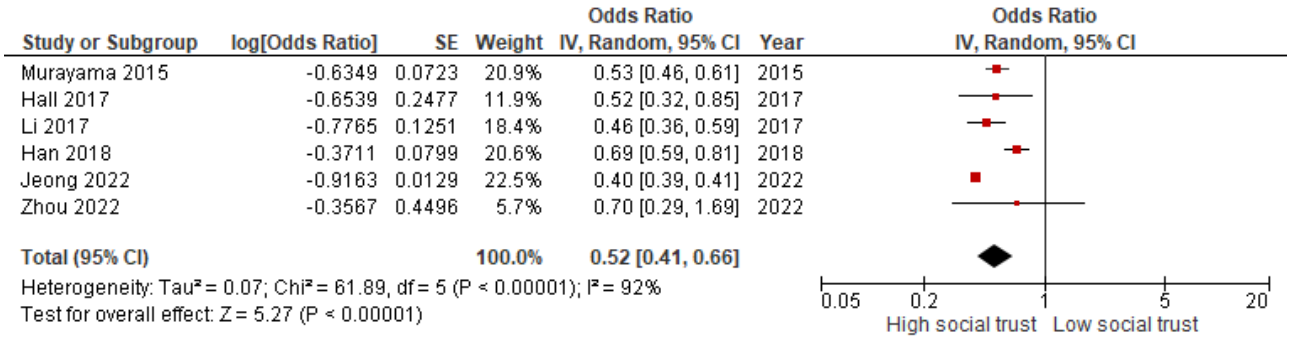

Figure 9. Forest Plot of the Effect of Social Trust on Depression

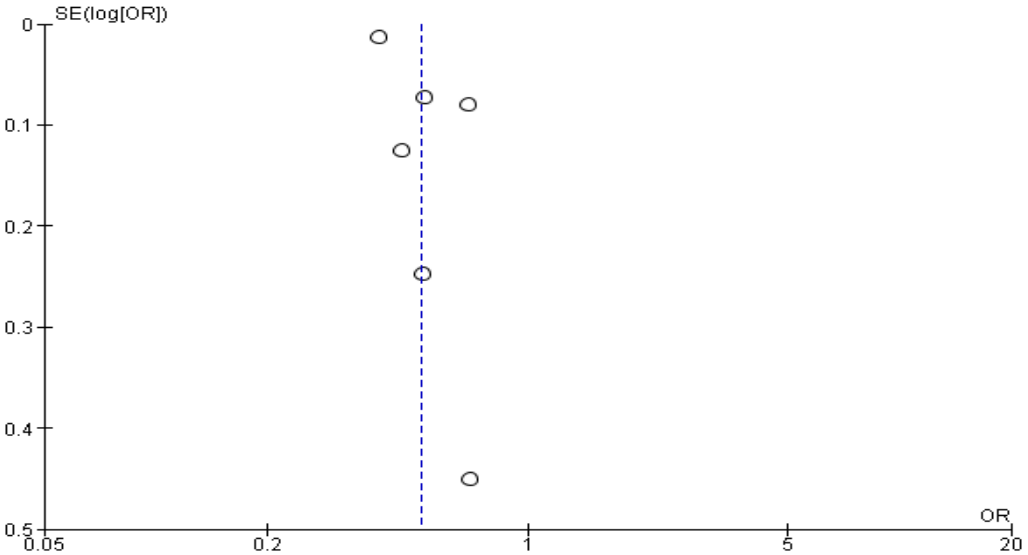

Figure 10. Funnel Plot of the Effect of Social Trust on Depression

Figure 9 presents a forest plot regarding the influence of social trust on depression in the elderly. The results showed that high social trust reduces the risk of depression, and this effect is statistically significant (aOR= 0.52, CI 95%= 0.41 to 0.66, p<0.001). The forest plot also shows large heterogeneity of estimates between studies (I^2= 92%). Thus, the calculation of the average estimated effect is carried out using a random effect model approach.

Figure 10 shows a funnel plot regarding the influence of social trust on the risk of depression. The funnel plot shows that the effect estimates are distributed equally to the right and left of the average vertical line. Thus, the funnel plot indicates the absence of publication bias.

Table 7. Odds Ratio (OR) and 95% Confidence Interval (95%CI) data on the influence of social networks on depression

Author (Year)	OR	CI 95%	
		Upper Limit	Lower Limit
Jeong et al., 2022	0.23	0.24	0.22
Ivan et al., 2019	0.34	0.15	0.75
Deu et al., 2015	0.34	0.15	0.75
Zhou et al., 2022	2.84	1.12	7.18
Lin et al., 2023	0.90	0.86	0.95
Abella et al., 2017	1.57	1.02	2.41

Table 7 presents an overview of 6 main articles with cross-sectional studies included in the meta-analysis of the influence of social networks on depression with a sample size of 57,495 and presents the odds ratio (aOR) and 95% confidence interval (95%CI) of the influence of social networks on depression at age further from each primary study that was carried out meta-analysis.

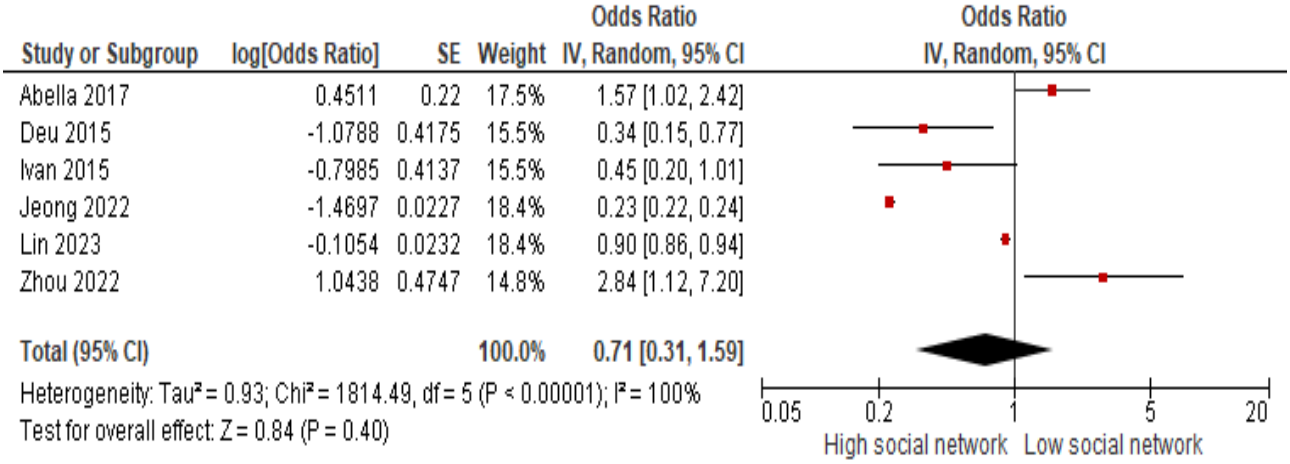

Figure 8. Forest Plot of the Effect of Social Network on Depression

Figure 8 presents a forest plot regarding the influence of social networks on depression in the elderly. The results showed that a high social network reduced the risk of depression, and this effect was statistically significant (aOR = 0.71., 95% CI= 0.31 to 1.59., p<0.400). The forest plot also shows large heterogeneity of estimates

between studies (I^2= 100%). Thus, the calculation of the average estimated effect is carried out using a random effect model approach.

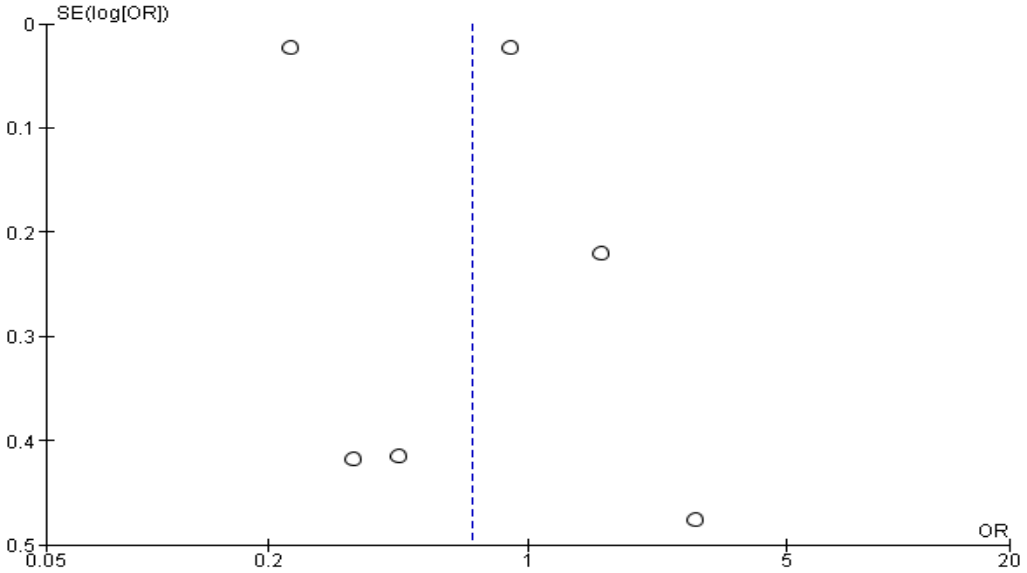

Figure 12. Funnel Plot of the Effect of Social Network on Depression

Figure 12 shows a funnel plot regarding the influence of social networks on the risk of depression. The funnel plot shows that the effect estimates are distributed equally to the right and left of the average vertical line, thus the funnel plot indicates the absence of publication bias.

DISCUSSION

1. Social Participation for Depression

There are 8 articles from several countries used to measure social participation on the risk of depression. The article consists of 1 study design, namely a cross-sectional study. Research has shown that there is a significant relationship between social participation and the risk of depression.

The relationship between social participation and the risk of depression may vary among different populations. A study in China reported that elderly people with low social participation were more likely to experience the risk of depression (Li et al., 2020). The existence of a significant relationship can be influenced by various factors, such as social support, individual characteristics and environmental factors. Social participation is often used as an intervention for depressive symptoms, and individuals may choose to alleviate depression by improving communication with others and increasing social participation when they are depressed. Therefore, although depressive symptoms affect a person's psychological flexibility, to alleviate loneliness and depression, individuals will actually maintain or even increase their social involvement (Zhao et al., 2023). Therefore, further research is needed to comprehensively understand the relationship between social participation and the risk of depression.

2. Social Cohesion for Depression

There are 6 articles from several countries used to measure social cohesion on the risk of depression. The article consists of 1 study design, namely a cross-sectional study. Research has shown that there is a signi-

ficant relationship between social cohesion and the risk of depression.

A study in Japan found that social cohesion was related to the risk of depression, that elderly people with low social cohesion were more likely to experience the risk of depression (Baranyi et al, 2020). Social cohesion is considered important, increasing social cohesion can be an effective social strategy for improving the mental health of the elderly (Qu et al, 2023). Research results that show a significant relationship can be influenced by various factors such as social context, subjective perceptions, and individual characteristics.

3. Reciprocity for Depression

There are 5 articles from several countries used to measure reciprocity for the risk of depression. The article consists of 1 study design, namely a cross-sectional study. Research has shown that there is a significant relationship between social cohesion and the risk of depression.

A study in Korea found that reciprocity was related to the risk of depression, that elderly people with low reciprocity were more likely to experience the risk of depression (Wang et al, 2019). The existence of reciprocity between social support and depression in elderly people has shown that the social support received can reduce the risk of depression. However, it is important to note that the concept of reciprocity, where the person providing support also receives support, can have a significant impact (Wang et al, 2023). The research results show that there is a significant relationship between reciprocity and the risk of depression which can be influenced by various factors, such as the intensity of interaction, extensive social support, and the quality of interpersonal relationships.

4. Social Trust for Depression

There are 6 articles from several countries used to measure social trust on the risk of depression. The article consists of 1 study design, namely a cross-sectional study. Research has shown that there is a significant relationship between social trust and the risk of depression.

A study in Japan found that social trust was related to the risk of depression, that elderly people with low social trust were more likely to experience the risk of depression (Cavanagh et al, 2022). High levels of social trust may be associated with lower levels of depression in older adults. Explains how social trust, which involves the belief that others will act honestly, kindly, and supportively, can protect older adults from the risk of depression. Factors such as received social support, feelings of inclusion in the community, and positive social interactions may play a role in the relationship between social trust and mental well-being (Sun et al, 2020). The research results show that there is a significant relationship between social trust and the risk of depression, which can be influenced by various factors, such as the quality of social interactions, the level of social inequality and discrimination.

5. Social Network for Depression

There are 6 articles from several countries used to measure social networks on the risk of depression. The article consists of 1 study design, namely a cross-sectional study. Research has shown that there is a significant relationship between social networks and the risk of depression.

A study in Taiwan found that social networks were related to the risk of depression, that elderly people with low social networks were more likely to experience the risk of depression (Lu et al., 2021). Social networks can contribute to a better understanding of mental health and also reduce

the risk of depression in older adults. The research results show that there is a significant relationship between social networks and the risk of depression, which can be influenced by various factors, such as the quality of relationships, level of social involvement, and social support.

AUTHORS CONTRIBUTION

Amanda Widyarahma played the role of searching, collecting and analyzing research data; Naili Zahrotun Mufidah played a role in analyzing data and reviewing documents. Agil Rafi'ah Afandi has a role to analyse the data and compile the articles.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

REFERENCES

A national survey. BMC Public Health. 20(1): 1-14. https://doi.org/10.1186-/s12889-020-09695-1

Bae M, Kim Y, Hong I. (2023). Factors of capital on depression in older adulthood: a comparison of urban and rural regions in Korea. In Healthcare. 11(21): 2850. https://doi.org/10.33-90/healthcare11212850.

Bai Z, Xu Z, Xu X, Qin X, Hu W, Hu Z. (2020). Association between social capital and depression among older people: evidence from Anhui Province China. BMC Public Health. 20. 1-11. https://doi.org/10.1186/s12889-020-09657-7.

Baranyi G, Sieber S, Cullati S, Pearce JR, Dibben CJL, Courvoisier DS. (2020). The longitudinal associations of perceived neighborhood disorder and lack of social cohesion with depression among adults aged 50 years or older: an individual-participant-data meta-analysis from 16 high-income countries. AmJ Epidemiol. 189(4): 343-353. https://doi.org/10.1093/aje/kwz209.

Cavanagh D, Jurcik T, Charkhabi M. (2022). How does trust affect help-seeking for depression in Russia and Australia? Int J Soc Psychiatry. 68(8): 1561-1570. https://doi.org/10.1177/-00207640211039253.

Cheng Y, Sun M, Wang F, Geng X, Wang F. (2021). Identification of hub genes related to Alzheimer's disease and major depressive disorder. Am J Alzheimers Dis Other Demen. 36. 1-13. https://doi.org/10.1177/153331-75211046123.

Cho SM, Saw YM, Saw TN, Than TM, Khaing M, Khine AT, et al. (2021). Prevalence and risk factors of anxiety and depression among the community-dwelling elderly in Nay Pyi Taw Union Territory Myanmar. Sci Rep. 11(1): 9763. https://doi.org/10.1038-/s41598-021-88621-w.

Choi E, Han KM, Chang J, Lee YJ, Choi KW, Han C. et al. (2021). Social participation and depressive symptoms in community-dwelling older adults: Emotional social support as a mediator. J Psychiatr Res. 137: 589-596. https://doi.org/10.1016/j.jpsychires.2020.10.043.

Domènech-Abella J, Lara E, Rubio-Valera M, Olaya B, Moneta MV, Rico-Uribe LA. et al. (2017). Loneliness and depression in the elderly: the role of social network. Soc Psychiatry Psychiatr Epidemiol. 52(4): 381-390. https://doi.org/10.1007/s00127-017-1339-3. PMID: 28154893.

Generaal E, Hoogendijk EO, Stam M, Henke CE, Rutters F, Oosterman M. et al. (2019). Neighbourhood characteristics and prevalence and severity of depression: pooled analysis of eight Dutch cohort studies. Br J Psychiatry. 215(2): 468-475. https://doi.org/10-.1192/bjp.2019.100.

Gianfredi V, Beran M, Koster A, Eussen SJ, Odone A, Signorelli C. et al. (2021). Association between social network characteristics and prevalent and incident depression: The Maastricht Study. J Affect Disord. 293: 338-346. https://doi.org/10.1016/j.jad.2021.06.046.5. PMID: 34229287.

Hall BJ, Lam AIF, Wu TL, Hou WK, Latkin C, Galea S (2017). The epidemiology of current depression in Macau, China: towards a plan for mental health action. Soc Psychiatry Psychiatr Epidemiol. 52: 1227-1235. https://doi.org/10.1007/s00127-017-1415-8.

Han KM, Han C, Shin C, Jee HJ, An H, Yoon HK. et al. (2018). Social capital, socioeconomic status, and depression in community-living elderly. J Psychiatr Res. 98: 133-140. https://doi.-org/10.1016/j.jpsychires.2018.01.002

Li JB, Yang A, Dou K, Wang LX, Zhang MC, Lin XQ (2020). Chinese public's knowledge, perceived severity, and perceived controllability of COVID-19 and their associations with emotional and behavioural reactions, social participation, and precautionary behaviour: A national survey. BMC Public Health. 20(1):1589. https://-doi.org/10.1186/s12889-020-09695-1.

Li Q, Zhou X, Ma S, Jiang M, Li L. (2017). The effect of migration on social capital and depression among older adults in China. Soc Psychiatry Psychiatr Epidemiol. 52: 1513-1522. https://doi.org/10.1007%2Fs00127-017-1439-0.

Lin YH, Han DS, Lee YH, Chan DC, Chang CH, Yang KC. et al. (2023). Social network associated with depressed mood and sarcopenia among older adults in Taiwan. J Formos Med Assoc. https://doi.org/10.1016/j.jfma.2023.11.004

Liu C, Zhou S, Bai X (2022). Intergenerational relationship quality, sense of loneliness, and attitude toward later life among aging Chinese adults in Hong Kong. Front Psychol. 13: 930-857. https://doi.org/10.3389%2Ffpsyg.2022.930857

Lu Y, Luo S, Liu X. (2021). Development of social support networks by patients with depression through online health communities: social network analysis. JMIR Medical Informatics. 9(1): 24618. https://doi.org/10.2196%2F2-4618.

Murayama H, Nofuji Y, Matsuo E, Nishi M, Taniguchi Y, Fujiwara Y. et al. (2015). Are neighborhood bonding and bridging social capital protective against depressive mood in old age? A multilevel analysis in Japan. Soc Sci Med. 124: 171-179. https://doi.org/10.10-16/j.socscimed.2014.11.042

Qu X, Qi X, Wu B, Yu J, Zhang H (2023). Perceived social cohesion and depressive symptoms among internal migrants in China: The mediating role of social adaptation. Front Public

Health. 11: 1-11. https://doi.org/10.3-389%2Ffpubh.2023.1096318

Saito M, Kondo N, Aida J (2017). Development of an instrument for community-level health related social capital among Japanese older people: the JAGES Project. J Epidemiol. 27(5): 221–227. https://doi.org/10.1016/j.-je.2016.06.005

Santini Z, Koyanagi, A, Tyrovolas, S, Haro JM (2015). The association of relationship quality and social networks with depression, anxiety, and suicidal ideation among older married adults: Findings from a cross-sectional analysis of the irish longitudinal study on ageing. J Affect Disord. 179: 134-141. https://doi.org/10.1016/j.jad.2015.03.015

Sun J, Xiao T, Lyu S, Zhao R (2020). The relationship between social capital and depressive symptoms among the elderly in China: the mediating role of life satisfaction. Risk Manag Health Policy. 13: 205-213. https://doi.org/-10.2147%2FRMHP.S247355

Van Zutphen EM, Kok AA, Rijnhart JJ, Rhebergen D, Huisman, M, Beekman A (2021). An examination of reciprocal effects between cardiovascular morbidity, depressive symptoms and loneliness over time in a longitudinal cohort of dutch older adults. J Affect Disord. 288: 122-128. https://doi.org-/10.1016/j.jad.2021.03.081

Wang G, Duan Kan Q, Zhou Y, Cheng Z, Tang S (2023). The correlation analysis of WeChat usage and depression among the middle-aged and elderly in China: the mediating role of social participation. BMC Public Health. 23(1): 462. https://doi.org/10.1186%-2Fs12889-023-15349-9.

Wang J, Luo N, Sun Y, Bai R, Li X, Liu L. et al. (2023). Exploring the reciprocal relationship between activities of daily living disability and depressive symptoms among middle-aged and older Chinese people: a four-wave, cross-lagged model. BMC Public Health. 23(1): 1-9. http://dx.doi.org/10.1186-/s12889-023-16100-0.

Wang R, Liu Y, Xue D, Yao Y, Liu P, Helbich M (2019). Cross-sectional associations between long-term exposure to particulate matter and depression in China: the mediating effects of sunlight, physical activity, and neighborly reciprocity. J Affect Disord. 249: 8-14. https://doi.org/10.1016/j.jad.2-019.02.007

WHO (2022). World Health Organization Depression Elderly. Available at: https://www.who.int/news-room/-fact-sheets/detail/mental-health-of-older-adults

Xin Y, Ren X (2020). Social capital as a mediator through the effect of education on depression and obesity among the elderly in China. Int J Environ Res Public Health. 17(11): 3977. https://doi.org/10.3390/ijerph-17113977

Zhao H, Wang X, Shi, Y. (2023). The effect of hearing impairment and social participation on depressive symptoms in older adults: a cross-lagged analysis. Front Syst Neurosci. 17: 1240587. https://doi.org/10.3389%2Ffncom.2023.1240587.

Zhou S, Li K, Ogihara A, Wang X. (2022). Association between social capital and depression among older adults of different genders: Evidence from Hangzhou China. Front Public Health. 10: 863574. https://doi.org/-10.3389%2Ffpubh.2022.863574.