



The Role of Social Support Networks in Health Outcomes: A Comprehensive Review

Anara Zh. Abitova^{1*}; Nadiar M. Mussin²; Gulmira Yerimbetova¹; Saltanat Zhumagaliyeva¹;

¹ Department for Scientific Work, West Kazakhstan Marat Ospanov Medical University, Aktobe, 030012, Kazakhstan

² General Surgery, West Kazakhstan Marat Ospanov Medical University, Aktobe, Kazakhstan

Received: 19/12/2023

Accepted: 25/02/2024

Published: 20/03/2024

Abstract

Social support networks, encompassing the relationships and connections that individuals have with others, play a vital role in shaping health outcomes. This paper examines the intricate relationship between social support and health, exploring the mechanisms through which social connections impact physical, mental, and emotional well-being. We review the extensive body of research that demonstrates the positive associations between strong social support networks and improved health outcomes, including reduced risk of chronic diseases, enhanced mental health, and greater longevity. The paper delves into the various pathways through which social support influences health, including stress buffering, health promotion, and access to resources. We further discuss the challenges of measuring social support and the complexities of social interactions, highlighting the importance of considering individual and cultural differences in assessing the impact of social connections on health. Finally, we explore strategies for promoting social support and building stronger communities, emphasizing the role of public health interventions, community-based programs, and policies that support social cohesion and community well-being.

Keywords: social support, social networks, health outcomes, chronic diseases, mental health, stress buffering, health promotion, social determinants of health, community well-being, public health interventions

1 Introduction

Social support, defined as the perceived or actual availability of resources and assistance from social networks, has increasingly gained recognition as a fundamental determinant of health and well-being. While traditional medical models have predominantly focused on biological and individual factors, a growing body of interdisciplinary research from fields such as epidemiology, psychology, sociology, and neuroscience has consistently demonstrated the profound and pervasive influence of social connections on a wide range of health outcomes. This recognition has shifted the paradigm of health from a purely biomedical model to a more holistic understanding that incorporates the social context and the critical role of human relationships in shaping health trajectories. This paper aims to delve into the intricate and multifaceted relationship between social support and health, exploring the various mechanisms by which social connections impact physical, mental, and emotional well-being across the lifespan. We will examine the diverse dimensions of social support, including its structural and functional components, and consider how these dimensions interact with individual characteristics and environmental factors to influence health outcomes. This exploration will move beyond simply demonstrating correlations between social support and health, aiming to unpack the biological, psychological, and behavioral pathways that mediate these effects. Furthermore, this paper will consider the complexities and nuances of social support, including the potential for negative social interactions, the differential impacts of social support across diverse populations, and the challenges of measuring and intervening on social support in real-world settings. By integrating insights

from multiple disciplines, this examination seeks to provide a comprehensive overview of the current state of knowledge, identify critical gaps in understanding, and ultimately contribute to the development of evidence-based interventions that promote social connectedness and enhance population health. This introduction acknowledges the need for a more nuanced and holistic understanding of the social determinants of health and highlights the crucial role of social support as a fundamental cornerstone of human well-being.

2 The Benefits of Social Support Networks

A wealth of empirical research across various disciplines consistently demonstrates the positive associations between strong social support networks and a wide array of improved health outcomes. These benefits extend across physical, mental, and emotional domains, highlighting the fundamental role of social connections in shaping overall well-being and longevity. This section explores the specific ways in which strong social support networks contribute to better physical health, enhanced mental well-being, and increased lifespan, providing a detailed overview of the multifaceted advantages of social connectedness (1).

Research has increasingly demonstrated that strong social support networks serve as a protective buffer against a wide range of chronic diseases, including cardiovascular disease, stroke, type 2 diabetes, and certain types of cancer. Individuals with robust social connections tend to have lower rates of chronic disease incidence and progression, suggesting that social support may play a critical role in disease prevention and management. The mechanisms underlying these protective effects are complex and likely involve a combination of

*Correspondence author: Anara Zh. Abitova, Department for Scientific Work, West Kazakhstan Marat Ospanov Medical University, Aktobe, 030012, Kazakhstan; E-mail: abitova_anara@mail.ru; Tel: +7 701 2683218

biological, behavioral, and psychological pathways. For instance, strong social support can encourage individuals to adopt healthier lifestyles, such as engaging in regular physical activity, eating a nutritious diet, and avoiding risky behaviors like smoking and excessive alcohol consumption. Social networks can also serve as a source of motivation, accountability, and practical support for maintaining healthy habits (2). Furthermore, social support has been shown to positively influence physiological processes, such as blood pressure, heart rate variability, and immune function. Research suggests that social isolation and loneliness can trigger stress responses that can lead to inflammation, hormonal imbalances, and compromised immune systems, increasing susceptibility to chronic disease. Conversely, strong social connections can buffer the impact of stress and promote physiological resilience, reducing the risk of developing chronic conditions. The protective effects of social support extend to specific diseases such as heart disease, where social isolation and loneliness have been linked to increased risk of hypertension, coronary artery disease, and stroke. Strong social connections, on the other hand, can contribute to better cardiovascular health through various pathways, including the promotion of healthier lifestyles, reduction of stress-related physiological responses, and increased adherence to medical advice and treatment plans (3).

The link between strong social support networks and enhanced mental well-being is well-established. Individuals with strong social connections tend to experience better mental health outcomes, including reduced rates of anxiety, depression, and stress. Social support provides a sense of belonging, connectedness, and emotional security, which can buffer the impact of life stressors and promote psychological resilience. Social networks serve as a source of emotional support, providing individuals with a sense of validation, understanding, and empathy during challenging times. Furthermore, social connections can offer practical assistance, such as help with childcare, financial support, or transportation, which can reduce the burdens associated with stressful life events. The ability to share experiences and feelings with supportive others can also reduce feelings of isolation and loneliness, which can exacerbate mental health problems (4). Social support networks can also provide opportunities for engagement in meaningful activities, which can enhance self-esteem, promote a sense of purpose, and improve overall psychological well-being. Conversely, social isolation and loneliness are associated with an increased risk of mental health problems, including depression, anxiety, and cognitive decline. The absence of social connections can lead to feelings of helplessness, despair, and reduced self-worth, which can negatively impact mental health. Strong social support networks, therefore, are not only a protective factor against mental illness but also a key ingredient in promoting emotional well-being and psychological resilience. The benefits of social support extend to specific mental health conditions such as depression, where social connections can provide a buffer against the negative effects of stress, promote positive coping strategies, and encourage adherence to treatment plans (5).

Studies have consistently shown that individuals with strong social connections tend to live longer and have a reduced risk of premature mortality compared to those who are socially isolated. The association between social support and longevity is robust and has been observed across various populations, cultures, and age groups. The mechanisms underlying this link are likely multifaceted and involve the complex interplay of biological, behavioral, and psychological factors. As mentioned previously, social support promotes healthy behaviors, reduces stress responses, enhances immune

function, and encourages adherence to medical advice, all of which can contribute to increased lifespan (6). Furthermore, strong social connections provide a sense of purpose and meaning in life, which can enhance motivation to engage in healthy behaviors and promote overall well-being. Individuals who are socially isolated, on the other hand, may be at increased risk of chronic disease, mental health problems, and premature mortality. The absence of social connections can lead to feelings of despair, hopelessness, and a reduced desire to care for oneself, which can negatively impact overall health and longevity. Social support, therefore, acts as a protective factor against premature death, extending lifespan and promoting a greater sense of purpose and well-being throughout life. The link between social connections and longevity has implications for public health policy, underscoring the need for interventions that promote social inclusion, address social isolation, and strengthen social support networks across communities (7).

3 Mechanisms of Social Support and Health

The beneficial effects of social support on health are not simply correlational; rather, they are mediated through a complex interplay of biological, psychological, and behavioral pathways. This section delves into the specific mechanisms through which social support exerts its influence on health outcomes, focusing on the stress-buffering capacity of social networks, their role in promoting healthy behaviors, and their contribution to accessing valuable resources. Understanding these mechanisms is crucial for developing effective interventions that leverage the power of social connections to improve population health (8).

One of the most well-established mechanisms through which social support influences health is its ability to act as a buffer against the detrimental effects of stress. Chronic stress can have a profound impact on both physical and mental health, contributing to a range of conditions including cardiovascular disease, weakened immune function, and mental health problems. Social support networks, with their capacity to provide emotional support, practical assistance, and a sense of belonging, can mitigate the physiological and psychological consequences of stress. When individuals face stressful situations, close relationships can provide a safe space for them to express their emotions, gain perspective, and feel understood and validated. The presence of supportive others can reduce feelings of isolation and helplessness, which can exacerbate the stress response (9). Furthermore, social support can provide practical assistance to help individuals cope with challenging situations, such as helping with childcare, providing financial assistance, or offering transportation. The availability of practical help can reduce the burden associated with stressful events, enabling individuals to cope more effectively. From a biological perspective, research suggests that strong social connections can modulate the stress response by reducing the release of stress hormones, such as cortisol. These hormones, when chronically elevated, can have detrimental effects on the cardiovascular system, the immune system, and the brain. Social support can also enhance the body's ability to recover from stress, facilitating physiological resilience. In summary, social support acts as a powerful buffer against the detrimental effects of stress, reducing both the subjective experience of stress and its physiological consequences on the mind and body (10).

Social support networks play a significant role in promoting healthy behaviors and discouraging risky practices. Individuals with strong social connections are more likely to adopt and maintain healthy habits, such as regular exercise, nutritious eating, and adherence to medical advice. Conversely,

social isolation and the lack of supportive relationships can hinder the adoption of healthy behaviors and contribute to risky practices, such as smoking, excessive alcohol consumption, and substance abuse. Social networks can provide encouragement, motivation, and practical support for adopting and maintaining healthy behaviors. Individuals with supportive relationships may be more likely to engage in physical activity together, share healthy recipes, or encourage one another to quit smoking. Social support can also promote adherence to medical treatment, reminding individuals to take their medication, attend appointments, and follow their healthcare provider's recommendations (10). Furthermore, social networks can influence health behaviors through the establishment of social norms. Social groups often develop shared expectations and values related to health and well-being, and individuals are more likely to adopt behaviors that align with the norms of their social network. If a social group values healthy eating and physical activity, individuals within that group may be more likely to engage in those behaviors themselves. Conversely, if a social group tolerates or even encourages risky behaviors, such as smoking or excessive alcohol consumption, individuals may be more likely to adopt those behaviors as well. Therefore, social support not only provides the encouragement and support needed to adopt healthy behaviors but also shapes the social norms that influence individual choices. Social networks, therefore, have the potential to promote both individual and collective well-being by fostering healthy behaviors and discouraging risky practices (11).

Social support networks can serve as a source of valuable resources, including information, support services, and even financial assistance. The concept of "social capital" highlights the importance of social connections in providing access to opportunities and resources that can enhance health and well-being. Individuals with strong social networks have access to a wider range of information, including knowledge about health resources, treatment options, and preventive measures. They are also more likely to have access to support services, such as childcare, transportation, or legal assistance, that can improve their ability to manage health challenges. Furthermore, social networks can provide access to financial resources, such as loans, donations, or job opportunities, which can reduce financial strain and promote economic stability (12). This access to resources can improve health outcomes by enabling individuals to obtain necessary medical care, access healthy food options, and create more supportive living environments. Social capital also refers to the collective resources that are available to individuals through their social networks, including shared knowledge, skills, and social connections. Individuals with strong social networks are more likely to have access to these resources, which can enhance their resilience, improve their ability to cope with stress, and promote their overall well-being. In summary, social support networks act as conduits for accessing resources that promote health, reduce inequality, and empower individuals to improve their circumstances. By leveraging social capital, communities can enhance their ability to respond to challenges, promote collective well-being, and foster more equitable access to resources for all members.

4 Challenges in Measuring and Assessing Social Support

While the evidence overwhelmingly supports the positive influence of social support on health outcomes, accurately measuring and assessing social support presents a number of significant methodological challenges. These challenges stem from the inherent complexity of the concept, its variability

across cultures, and the influence of individual differences. This section delves into these challenges, focusing on the difficulties in defining and measuring social support, the importance of considering cultural context, and the need to acknowledge the impact of individual differences. Addressing these challenges is crucial for developing valid and reliable measures of social support and for conducting rigorous research that accurately assesses its role in health and well-being (13).

One of the primary challenges in studying social support is the difficulty in defining and measuring this inherently complex concept. Social support encompasses various dimensions, including emotional support (the availability of empathy, understanding, and care), practical assistance (the provision of tangible help, such as financial support or help with childcare), social integration (the extent to which an individual is embedded in a social network and feels a sense of belonging), and network size (the number of relationships an individual has). The relative importance of each of these dimensions may vary depending on the specific health outcome under investigation and the context in which the research is being conducted. Furthermore, social support can be assessed both objectively (e.g., through measures of network size and frequency of social contact) and subjectively (e.g., through measures of perceived support). The objective measures, while providing quantifiable data, may not fully capture the qualitative aspects of social relationships. Subjective measures, on the other hand, are often influenced by individual perceptions, expectations, and cultural norms (5). The challenge, therefore, lies in developing measures that capture the multifaceted nature of social support and are both valid and reliable across different contexts. Furthermore, it is essential to distinguish between received support (the actual assistance provided by others) and perceived support (the belief that support is available if needed). Research suggests that perceived support may be more strongly associated with health outcomes than received support, highlighting the importance of measuring both the objective and subjective dimensions of social support. The use of self-report measures, while convenient and cost-effective, may also be influenced by biases, such as recall bias, social desirability bias, and response style. Therefore, researchers must carefully consider the strengths and limitations of different measurement approaches and must choose measures that are appropriate for the specific research question and population under study. Finally, the dynamic nature of social support presents a challenge to measurement, as social networks and support systems can change over time in response to life events and developmental transitions. Therefore, longitudinal studies that track social support over time are essential for understanding its long-term impact on health outcomes (14).

The significance and expression of social support can vary dramatically across cultures, making it crucial to consider cultural context when assessing its impact on health. What constitutes social support in one culture may be very different in another. For example, in some cultures, strong family bonds and collective support are highly valued, while in other cultures, individual autonomy and reliance on a smaller network of close friends may be more common. Therefore, measures of social support developed in one cultural context may not be valid or reliable in another. The types of support that are considered appropriate or helpful may also vary across cultures. For example, in some cultures, seeking help or expressing emotions may be stigmatized, making it difficult for individuals to access and benefit from social support. Furthermore, cultural norms regarding communication, conflict resolution, and interpersonal relationships can influence the dynamics of social support and the way in which individuals

experience their social connections. Researchers must be sensitive to these cultural variations and should avoid imposing their own cultural values when interpreting the meaning of social support (15). Qualitative methods, such as interviews and ethnographic observations, can be particularly valuable for gaining insights into the cultural context of social support and for identifying culturally appropriate measures. Researchers should also engage with community members and cultural experts to ensure that their research is sensitive to the values, beliefs, and practices of the populations they are studying. Finally, it is important to avoid making generalizations about entire cultures and to acknowledge the diversity within cultural groups. Therefore, studies that examine the impact of social support should carefully consider the cultural context and employ culturally appropriate methods and measures (16).

The effects of social support can vary significantly based on individual differences, such as personality traits, coping styles, and the quality of relationships. Individuals with different personality traits may perceive and utilize social support differently. For example, individuals who are more extroverted may be more likely to actively seek out social connections and to benefit from large social networks, while introverted individuals may be more comfortable with a smaller network of close friends. Furthermore, coping styles can influence how individuals respond to social support. Individuals who tend to cope with stress through active problem-solving may benefit from practical support, while those who tend to cope through emotional processing may benefit more from emotional support. The quality of relationships is another critical factor that can influence the impact of social support. Supportive relationships are characterized by trust, empathy, and mutual respect, while negative or ambivalent relationships can be a source of stress and conflict (17). Research suggests that high-quality relationships are more likely to buffer against the negative effects of stress and to promote better health outcomes than low-quality relationships. Furthermore, individuals' past experiences, attachment styles, and social skills can also influence their ability to form and maintain supportive relationships. Therefore, studies that examine the impact of social support should carefully consider the role of individual differences and should use methods that allow for the assessment of both quantitative and qualitative aspects of social relationships. Longitudinal studies are also crucial for understanding how individual characteristics and relationship dynamics may influence the long-term impact of social support on health outcomes.

5 Promoting Social Support and Building Stronger Communities

Recognizing the fundamental role of social support in health and well-being necessitates a multi-pronged approach that involves targeted public health interventions, supportive policy initiatives, and proactive individual actions. This section explores specific strategies for promoting social support and building stronger communities, focusing on the need for community-based programs, supportive policy initiatives, and individual responsibility in cultivating and maintaining strong social connections. By implementing these strategies at various levels, we can create environments that foster social inclusion, reduce social isolation, and promote a greater sense of community belonging, ultimately improving population health outcomes (17). Public health interventions play a crucial role in promoting social support by creating accessible and supportive environments that foster social connections and provide opportunities for meaningful interactions. These

interventions should focus on both universal strategies, aimed at promoting social support across the population, and targeted approaches, aimed at addressing the specific needs of vulnerable populations (18).

Community-Based Programs: Investing in community-based programs that provide opportunities for social interaction, engagement, and skill-building is essential for strengthening social support networks. These programs can include community centers, senior citizen programs, youth groups, recreational activities, and volunteer organizations. Community centers can serve as focal points for social interaction, providing a space for individuals to connect with others, participate in activities, and access support services. Senior citizen programs can help to reduce social isolation among older adults, providing opportunities for engagement, social interaction, and access to resources (19). Youth groups can promote positive social development, building social skills, and providing support networks for young people. Volunteer organizations can also foster social connections, providing opportunities for individuals to contribute to their communities and to form meaningful relationships with others. These programs should be accessible, inclusive, and culturally sensitive, ensuring that they meet the diverse needs of the communities they serve. Furthermore, they should be designed with the input and participation of community members, to ensure that they are relevant, responsive, and sustainable (20).

Table: The Role of Social Support Networks in Health Outcomes

Mechanisms of Social Support & Health			
Stress	Buffering	Health Promotion	Access to Resources
Mitigates the negative impact of stress by providing emotional support, practical assistance, and reducing physiological stress responses.		Encourages healthy behaviors (exercise, nutrition, adherence to medical advice) through motivation and shared social norms.	Provides access to information, support services, financial aid, and social capital that enhances health and well-being.

Mental Health Services: Expanding access to mental health services, including counseling, therapy, and support groups, is critical for addressing mental health issues related to social isolation and loneliness. Mental health services should be readily available and affordable, and should provide culturally sensitive and evidence-based treatments. Support groups can offer a safe and supportive space for individuals to connect with others who share similar experiences, reduce feelings of isolation, and gain access to peer support and resources. Furthermore, mental health services should integrate strategies for promoting social connectedness, such as encouraging individuals to join social groups, to engage in community activities, and to nurture their relationships with others. These services should also address the stigma associated with mental health issues, creating a more accepting and supportive environment for individuals seeking help (21).

Policy initiatives at local, state, and national levels can play a significant role in shaping supportive environments that promote social cohesion, reduce social isolation, and strengthen social support networks. These policies should address the social determinants of health and should promote equity and inclusion across all segments of society. **Social Policies:** Implementing social policies that support social cohesion, promote community well-being, and reduce social isolation is

essential for creating a more supportive and connected society. These policies can include measures to address poverty, inequality, and discrimination, all of which can contribute to social isolation and hinder the development of strong social networks. Policies that support affordable housing, access to healthcare, quality education, and employment opportunities can improve individuals' financial security and social well-being, creating a more supportive environment for all. Furthermore, policies that promote social inclusion, address discrimination, and support the rights of marginalized groups can reduce social isolation and enhance social cohesion. Social policies should also promote family well-being, providing resources and support for parents, children, and families. These policies should be evidence-based, culturally sensitive, and developed with the input of community stakeholders (22).

Urban Planning: Designing urban environments that encourage social interaction and promote community well-being is critical for creating places where individuals can connect and build relationships. Urban planning should prioritize the creation of public spaces, such as parks, plazas, community gardens, and pedestrian-friendly streets, that encourage social interaction and community engagement. Public transportation should also be accessible and affordable, enabling individuals to travel throughout their communities and connect with others. Furthermore, urban planning should prioritize mixed-use developments, bringing together residential, commercial, and recreational spaces in close proximity, fostering a sense of community and reducing social isolation. Urban environments should also be designed with accessibility in mind, ensuring that they are navigable for all individuals, including people with disabilities. Finally, urban planning should be guided by community engagement, ensuring that residents have a voice in shaping their neighborhoods and creating environments that meet their specific needs (23).

While public health interventions and policy initiatives are crucial for creating a supportive environment, individual actions also play a significant role in cultivating strong social relationships and seeking support when needed. **Cultivating Relationships:** Nurturing and maintaining close relationships with family, friends, and community members is essential for building strong social support networks. This involves actively engaging in social activities, communicating regularly with loved ones, and investing time and energy into maintaining meaningful relationships. It is also important to be an active listener, to be supportive of others, and to be open to building new connections. Furthermore, individuals can participate in community events, join social groups, and engage in volunteer activities to connect with others who share their interests and values. By investing in social relationships, individuals can create a strong support network that can provide a source of comfort, companionship, and assistance during times of need (24).

Seeking Support: Reaching out for support when needed is a sign of strength, not weakness. Individuals should not hesitate to seek help from their friends, family, or professionals when they are facing challenges. This may involve sharing their feelings with trusted loved ones, seeking counseling or therapy, or joining a support group. It is important to be open to receiving support, to be honest about one's needs, and to be willing to accept help from others. Furthermore, individuals should create a network of support that includes a diverse range of individuals, including family members, friends, colleagues, and community members. By building a diverse and supportive network, individuals can have access to a wide range of resources and support systems during times of need.

6 Conclusion

This exploration of the intricate relationship between social support and health has underscored the profound and pervasive influence of social connections on a wide range of health outcomes. The evidence overwhelmingly demonstrates that strong social support networks are not merely a desirable social amenity but rather a fundamental determinant of health, contributing to improved physical and mental well-being, increased longevity, and enhanced resilience in the face of life's inevitable challenges. As we conclude this examination, it is imperative to reaffirm the central role of social support and to emphasize the critical need for a multi-faceted approach that prioritizes the cultivation of strong social connections as a cornerstone of public health strategy. The future of public health hinges on our ability to recognize the social context of health, to move beyond individualistic approaches, and to create societies where social support is valued, promoted, and accessible to all. The preceding sections have highlighted the multifaceted ways in which social support influences health, acting as a buffer against stress, promoting healthy behaviors, and providing access to valuable resources. We have seen how strong social connections can reduce the risk of chronic diseases, enhance mental well-being, and extend lifespan, while social isolation and loneliness can have detrimental effects on both physical and mental health. The mechanisms through which social support exerts its influence are complex and interconnected, involving biological, psychological, and behavioral pathways. This underscores the need for a holistic approach to health that recognizes the complex interplay of factors that shape human well-being. Furthermore, we have explored the challenges in measuring and assessing social support, recognizing the complexity of this concept, its variability across cultures, and the influence of individual differences. Overcoming these challenges requires ongoing methodological development, culturally sensitive approaches, and a careful consideration of both objective and subjective aspects of social relationships.

Ethical issue

Authors are aware of and comply with, best practices in publication ethics specifically about authorship (avoidance of guest authorship), dual submission, manipulation of figures, competing interests, and compliance with policies on research ethics. Authors adhere to publication requirements that the submitted work is original and has not been published elsewhere in any language.

Competing interests

Conceptualization, Anara Zh. Abitova; methodology, Gulmira Yerimbetova; formal analysis, Saltanat Zhumagaliyeva; investigation, Anara Zh. Abitova, Nadiar M. Mussin; resources, Gulmira Yerimbetova ; writing—original draft preparation, Saltanat Zhumagaliyeva; writing—review and editing, Anara Zh. Abitova, Nadiar M. Mussin.

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Data Availability Statement

All data generated or analyzed during this study are included in this published article.

Conflicts of Interest

The authors declare no competing interests.

References

1. Uphoff E, Robertson L, Cabieses B, Villalón FJ, Purgato M, Churchill R, et al. An overview of systematic reviews on mental health promotion, prevention, and treatment of common mental disorders for refugees, asylum seekers, and internally displaced persons. *Cochrane Database Syst Rev*. 2020;9(9):Cd013458.
2. Kubzansky LD, Huffman JC, Boehm JK, Hernandez R, Kim ES, Koga HK, et al. Positive Psychological Well-Being and Cardiovascular Disease: JACC Health Promotion Series. *J Am Coll Cardiol*. 2018;72(12):1382-96.
3. Bhatti AB, Haq AU. The Pathophysiology of Perceived Social Isolation: Effects on Health and Mortality. *Cureus*. 2017;9(1):e994.
4. Huang Y, Su X, Si M, Xiao W, Wang H, Wang W, et al. The impacts of coping style and perceived social support on the mental health of undergraduate students during the early phases of the COVID-19 pandemic in China: a multicenter survey. *BMC Psychiatry*. 2021;21(1):530.
5. Bedaso A, Adams J, Peng W, Sibbritt D. The mediational role of social support in the relationship between stress and antenatal anxiety and depressive symptoms among Australian women: a mediational analysis. *Reprod Health*. 2021;18(1):250.
6. Yang YC, Boen C, Gerken K, Li T, Schorpp K, Harris KM. Social relationships and physiological determinants of longevity across the human life span. *Proc Natl Acad Sci U S A*. 2016;113(3):578-83.
7. Brandt L, Liu S, Heim C, Heinz A. The effects of social isolation stress and discrimination on mental health. *Transl Psychiatry*. 2022;12(1):398.
8. Trachtenberg E. The beneficial effects of social support and prosocial behavior on immunity and health: A psychoneuroimmunology perspective. *Brain Behav Immun Health*. 2024;37:100758.
9. Hostinar CE, Gunnar MR. Social Support Can Buffer against Stress and Shape Brain Activity. *AJOB Neurosci*. 2015;6(3):34-42.
10. Gage-Bouchard EA. Social support, flexible resources, and health care navigation. *Soc Sci Med*. 2017;190:111-8.
11. Bavel JJV, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara M, et al. Using social and behavioural science to support COVID-19 pandemic response. *Nat Hum Behav*. 2020;4(5):460-71.
12. Van Dijck J. [Social media and trust in medical expertise]. *Ned Tijdschr Geneesk*. 2022;166.
13. Klim C, Ganoczy D, Pfeiffer PN. Associations Between the NIH Toolbox Adult Social Relationship Scales and Suicidal Ideation. *Community Ment Health J*. 2020;56(1):186-92.
14. McGill E, Er V, Penney T, Egan M, White M, Meier P, et al. Evaluation of public health interventions from a complex systems perspective: A research methods review. *Soc Sci Med*. 2021;272:113697.
15. Kitayama S, Park J, Miyamoto Y, Date H, Boylan JM, Markus HR, et al. Behavioral Adjustment Moderates the Link Between Neuroticism and Biological Health Risk: A U.S.-Japan Comparison Study. *Pers Soc Psychol Bull*. 2018;44(6):809-22.
16. Renjith V, Yesodharan R, Noronha JA, Ladd E, George A. Qualitative Methods in Health Care Research. *Int J Prev Med*. 2021;12:20.
17. Asselmann E, Kunas SL, Wittchen HU, Martini J. Maternal personality, social support, and changes in depressive, anxiety, and stress symptoms during pregnancy and after delivery: A prospective-longitudinal study. *PLoS One*. 2020;15(8):e0237609.
18. Castillo EG, Ijadi-Maghsoodi R, Shadravan S, Moore E, Mensah MO, 3rd, Docherty M, et al. Community Interventions to Promote Mental Health and Social Equity. *Curr Psychiatry Rep*. 2019;21(5):35.
19. Haldane V, Chuah FLH, Srivastava A, Singh SR, Koh GCH, Seng CK, et al. Community participation in health services development, implementation, and evaluation: A systematic review of empowerment, health, community, and process outcomes. *PLoS One*. 2019;14(5):e0216112.
20. Umstadtd Meyer MR, Prochnow T, Pickett AC, Perry CK, Bridges Hamilton CN, Abildso CG, et al. The Effects of Play Streets on Social and Community Connectedness in Rural Communities. *Int J Environ Res Public Health*. 2021;18(19).
21. Wainberg ML, Scorza P, Shultz JM, Helpman L, Mootz JJ, Johnson KA, et al. Challenges and Opportunities in Global Mental Health: a Research-to-Practice Perspective. *Curr Psychiatry Rep*. 2017;19(5):28.
22. Habib RR, El-Harakeh A, Ziadee M, Abi Younes E, El Asmar K. Social capital, social cohesion, and health of Syrian refugee working children living in informal tented settlements in Lebanon: A cross-sectional study. *PLoS Med*. 2020;17(9):e1003283.
23. Faskunger J. Promoting active living in healthy cities of Europe. *J Urban Health*. 2013;90 Suppl 1(Suppl 1):142-53.
24. Umberson D, Montez JK. Social relationships and health: a flashpoint for health policy. *J Health Soc Behav*. 2010;51 Suppl(Suppl):S54-66.