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GUIDANCE-ORIENTED PSYCHOSOCIAL SUPPORT FOR PATIENTS WITH TYPE 2 DIABETES: INSIGHTS FROM DIABETES CARE CENTRES IN MAKKAH

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ABSTRACT

Living with type 2 diabetes requires sustained self-management, psychological adjustment, and ongoing engagement with healthcare services and personal support networks. Social relationships play an important role in shaping coping and treatment adherence; however, their function as guidance- and counselling-oriented support systems remains underexplored within Arab contexts. This study examined formal (healthcare professionals) and informal (family) social relationships among adults with type 2 diabetes attending diabetes and endocrinology centres in Makkah, focusing on emotional, informational, and tangible support. A descriptive cross-sectional design was employed using a stratified random sample of 381 adults. Data were collected through a structured questionnaire and analysed using descriptive statistics. Findings showed that overall social support was perceived as moderate. Formal relationships were stronger in informational support, while family relationships provided stronger emotional support. The findings highlight the need for integrated guidance and counselling approaches to enhance psychosocial wellbeing and sustained self-management.

Sustainable Development Goals (SDGs)

This study contributes to the following United Nations Sustainable Development Goals:

SDG 3: Good Health and Well-being;

SDG 4: Quality Education;

SDG 10: Reduced Inequalities.

KEYWORDS: Social relationships; Diabetes self-management; Guidance and counselling; Social support networks; Chronic illness coping; Healthcare relationships; Family support; Saudi Arabia.

1 INTRODUCTION

Living in good health is widely recognised as a fundamental indicator of societal development and well-being. Health status is commonly assessed through tangible health outcomes, including a reduced prevalence of chronic diseases and individuals' capacity to effectively manage and live with long-term conditions. In this context, countries striving to achieve advanced levels of development—among them the Kingdom of Saudi Arabia—have increasingly prioritised the enhancement of healthcare systems and the prevention of chronic illnesses.

Recent data published by the General Authority for Statistics indicate that 97.4% of adults aged 15 years and above in Saudi Arabia self-rated their health as good or better. Nevertheless, 18.95% of the adult population reported living with at least one chronic disease, with diabetes mellitus emerging as the most prevalent condition at a rate of 9.1% (General Authority for Statistics, 2024). While these figures reflect a relative advancement in the national healthcare system, the continued high prevalence of chronic diseases—particularly diabetes—highlights the pressing need for more effective and sustainable care strategies that extend beyond clinical treatment alone.

Despite sustained efforts by the Saudi Ministry of Health to promote diabetes prevention and increase public awareness, international reports reveal a concerning epidemiological trend. According to the World Health Organisation, as cited by Al Dawish et al. (2016), Saudi Arabia ranks second in the Middle East and seventh globally in terms of diabetes prevalence. Current estimates suggest that approximately seven million individuals are living with diabetes, in addition to nearly three million people classified as prediabetic. Of particular concern is the rapid increase in diabetes prevalence observed over the past three decades, during which incidence rates have increased nearly tenfold.

The seriousness of diabetes extends beyond its widespread occurrence to encompass the severe acute and chronic complications associated with inadequate glycemic control. The Saudi Ministry of Health, referencing World Health Organisation data, reported that diabetes was directly responsible for approximately 1.5 million deaths worldwide in 2019 and contributed to nearly 6.7 million deaths in 2021. Furthermore, diabetes remains a leading cause of blindness, kidney failure, cardiovascular disease, stroke, and lower-limb amputations (Saudi Ministry of Health, 2024).

Although awareness of diabetes and its associated risks is relatively high, evidence suggests that effective long-term disease management remains

limited. Studies indicate that only approximately 25% of individuals with type 2 diabetes in Saudi Arabia achieve the recommended levels of glycated haemoglobin (HbA1c) (Gümüş, 2024). This shortfall may be attributed, in part, to the prolonged and demanding nature of diabetes care, which can lead to treatment fatigue, reduced motivation, and declining adherence over time. These challenges underscore the importance of supportive strategies that facilitate sustained self-management and psychological resilience.

Within this context, social relationships have gained increasing recognition as a critical component of chronic disease management. A growing body of research highlights the role of social support in promoting health-preserving behaviours and improving clinical outcomes among individuals with diabetes. A systematic review conducted by Briggs et al. (2021) demonstrated that higher levels of social support were associated with improved glycemic control, greater treatment adherence, enhanced disease-related knowledge, better quality of life, and reduced psychological distress. Conversely, insufficient social support was linked to higher rates of diabetes-related complications and mortality.

However, the presence of social relationships alone does not necessarily guarantee effective or meaningful support. The evidence suggests that the quality, structure, and functional relevance of social ties play a decisive role in shaping health outcomes. While supportive family relationships and informed caregivers may positively influence diabetes self-management, other social interactions—such as those with friends or colleagues—may offer limited benefit when disease-specific understanding is lacking or when emotional needs remain unmet.

Despite the expanding literature on social support and diabetes management, limited attention has been given to the structural characteristics and functional effectiveness of social relationships within specific cultural and healthcare contexts, particularly in relation to guidance, counselling, and sustained psychosocial support for individuals living with diabetes.

Accordingly, this study seeks to examine the nature of social relationships among individuals with diabetes, with particular emphasis on their role in providing effective emotional, informational, and practical support. By focusing on both formal relationships within healthcare settings and informal relationships within family and community contexts, this study aims to contribute to a more nuanced understanding of how guidance- and counselling-oriented social interactions may support adaptive

coping, long-term disease management, and improved wellbeing among patients living with diabetes.

2 THEORETICAL AND CONCEPTUAL FRAMEWORK

Key Concepts

Social Relationships

Social relationships are defined as structured patterns of interaction between two or more individuals, involving purposeful communication and shared expectations regarding behaviour (Ghaith, 2006). From a sociological perspective, Granovetter's social network approach conceptualises relationships as dynamic ties through which individuals, groups, or institutions gain differential access to valuable resources, such as information, influence, and support, resulting in hierarchical and interdependent social structures (Abdeljawad, 2009).

Operationally, social relationships among individuals living with diabetes are defined in this study as recurrent and reciprocal interactions between patients and surrounding social actors, including healthcare professionals and family members, through both formal and informal ties. These relationships function as channels through which patients receive tangible support, informational guidance, and emotional support, all of which are essential for long-term illness management.

From a guidance and counselling perspective, social relationships are conceptualised as functional support systems that facilitate emotional regulation, health-related decision-making, coping, and sustained self-management among individuals living with chronic illness.

On the basis of the nature of the relationship and the source of support, social relationships are categorised into two main types:

Formal Social Relationships

Formal social relationships refer to recurrent interactions between individuals with diabetes and healthcare professionals within structured institutional settings, governed by explicit professional rules and regulations. These relationships provide patients with tangible medical support, informational guidance, and emotionally supportive counselling aimed at enhancing disease understanding, adherence, and self-regulation.

Informal Social Relationships

Informal social relationships refer to recurrent

interactions between individuals with diabetes and family members, governed by implicit social norms rather than formal regulations. These relationships primarily serve as sources of emotional containment, motivational support, practical assistance, and ongoing reinforcement of health-related behaviours, contributing to psychological wellbeing and sustained disease management.

Individuals living with diabetes mellitus

According to the Saudi Ministry of Health, diabetes mellitus is a chronic condition that affects the body's ability to regulate blood glucose levels due to impaired insulin production or utilisation, resulting in abnormal hyperglycaemia or hypoglycaemia (Saudi Ministry of Health, 2024). Type 2 diabetes mellitus, which constitutes the focus of the present study, typically develops in adulthood and is characterised by insufficient insulin secretion or reduced insulin sensitivity (Al-Sahl et al., 2024). Management of this condition involves lifestyle modifications, including dietary regulation and physical activity, in addition to pharmacological treatment where necessary (Al-Ghazali, 2012).

In this study, individuals living with type 2 diabetes were defined as adults who were clinically diagnosed by a specialist physician and referred to diabetes and endocrinology centers affiliated with public hospitals across the city of Makkah.

3 THEORETICAL FRAMEWORK

Social Network Theory

Social network theory provides a foundational framework for understanding how patterns of social relationships influence individual behaviour and access to resources. Rather than focusing on normative assumptions about how individuals should behave, social network analysts examine how people and groups actually behave within structured relational systems, emphasising the role of social ties over individual attributes (Ritzer & Stepnisky, 2021). The central premise of social network theory is that social structures consist of interconnected relationships that constrain and enable individual actions. As articulated by Wellman, social analysis should prioritise the examination of relational patterns that constitute the underlying architecture of social systems, as individual behaviour is shaped by these structural constraints rather than solely by personal choice (Abdeljawad, 2009).

The theory is grounded in several key principles:

- (1) social ties vary in strength, content, and intensity;
- (2) relationships must be analysed within the broader

- network context;
- (3) social networks are dynamic and transitional;
 - (4) network structures facilitate both cooperation and competition; and
 - (5) unequal distribution of resources within networks results in differential access to support and influence.

From a health and chronic illness perspective, social network theory offers a valuable lens for understanding how individuals with diabetes mobilise support to manage their condition. Patients engage in formal social relationships with healthcare professionals to access medical expertise, diagnostic services, and structured informational guidance. Simultaneously, they rely on informal social relationships, particularly within the family, to secure the emotional reassurance, motivational support, and sustained encouragement necessary for long-term adherence to treatment regimens.

Despite the availability of specialised diabetes care services in Saudi Arabia—including 28 diabetes and endocrinology centres nationwide—national data indicate that approximately 72% of adults with diabetes fail to achieve adequate glycaemic control (Saudi Ministry of Health, 1441–1445 AH). These findings suggest that medical services alone may be insufficient to support sustained self-management, highlighting the importance of continuous relational support beyond clinical settings.

From a guidance and counselling perspective, social network theory elucidates how both formal and informal relationships function as complementary systems of support. Formal relationships provide professional counselling, structured guidance, and health education, whereas informal relationships—particularly family ties—offer emotional stability, behavioural reinforcement, and adaptive coping support. The effectiveness of these relationships depends not only on their existence but also on their functional quality, relational coherence, and alignment with patients' psychosocial needs.

Accordingly, this study adopts social network theory as an integrative framework to examine how the structure and function of social relationships contribute to effective guidance, counselling-oriented support, and sustained diabetes self-management.

4 REVIEW OF RELATED STUDIES (SYNTHESIS)

Previous research has consistently demonstrated the importance of social relationships and social support in diabetes management across diverse cultural contexts. Studies have shown that higher levels of

perceived social support are associated with improved treatment adherence, better psychological adjustment, enhanced disease acceptance, and improved quality of life among individuals with diabetes (Gray, 2020; Briggs et al., 2021).

Research focusing on patient-provider relationships has further highlighted the role of effective communication, empathy, shared decision-making, and informational guidance in improving therapeutic adherence and treatment compatibility among individuals with diabetes (Al-Alwani, 2022). Similarly, family-based studies have underscored the significance of emotional closeness, marital adjustment, and household support in shaping patients' coping capacities and psychological wellbeing (Al-Qurashi & Mashrab, 2021).

International studies have also emphasised the broader social environment of diabetes management, illustrating how supportive relational contexts facilitate adaptive coping, whereas conflictual or unsupportive relationships exacerbate psychological distress and undermine self-management efforts (Deborah et al., 2016; Wang et al., 2019).

Empirical evidence further supports the association between social support and adaptive coping among individuals with type 2 diabetes. Ramkisson et al. (2017) reported that higher levels of perceived social support were associated with improved emotional coping and more effective self-management behaviours among adults living with diabetes.

Despite this growing body of literature, existing studies have predominantly examined social support outcomes rather than systematically exploring the structural and functional characteristics of social relationships from guidance and counselling perspectives. Moreover, research addressing these dynamics within Arab and Saudi contexts remains limited. Consequently, there is a clear need for studies that move beyond general notions of social support to examine how social relationships operate as guidance-oriented systems that shape coping, adherence, and long-term wellbeing among individuals living with diabetes.

5 RESEARCH AIM AND QUESTIONS

Research Aim

The present study aims to examine the nature of social relationships among individuals living with diabetes attending diabetes and endocrinology centres in the city of Makkah, with particular emphasis on how these relationships function as **guidance- and counselling-oriented support systems** that influence coping, self-management, and psychosocial wellbeing.

Research Questions

1. How do individuals living with diabetes perceive the nature and effectiveness of their social relationships within diabetes and endocrinology centers in the city of Makkah?

This main question is addressed through the following subquestions:

- a. How do patients perceive **formal social relationships** with healthcare professionals in terms of guidance, informational support, emotional reassurance, and counselling-oriented interactions?
- b. How do patients perceive **informal social relationships** with family members in terms of emotional support, motivational guidance, and sustained assistance in managing diabetes?

Significance of the Study

The significance of the present study can be articulated across several interconnected dimensions:

1. Scholarly Contribution

This study contributes to the limited body of research examining social relationships among individuals living with diabetes within the Saudi context. To the best of the researchers' knowledge, few studies have directly addressed social relationships as structured support systems among individuals with diabetes from guidance and counselling perspectives in Saudi society.

2. Guidance and Counselling Practice

By conceptualising social relationships as functional sources of emotional, informational, and practical guidance, this study provides insights that may inform the development of counselling-oriented interventions aimed at enhancing coping, treatment adherence, and psychological adjustment among individuals living with diabetes.

3. Healthcare and Psychosocial Integration

The findings may assist healthcare professionals, counsellors, and psychosocial practitioners in developing a more comprehensive understanding of supportive relationship patterns that contribute to improved clinical and psychosocial outcomes. This is particularly relevant given the established global consensus regarding the relationship between glycemic control and the prevention of diabetes-related complications (Rossi et al., 2010).

4. Policy and Service Development

The findings of this study may support decision-makers and service planners in identifying gaps within existing support networks and in developing alternative or complementary guidance and counselling services when certain social relationship patterns fail to provide effective support. This aligns with national health priorities emphasising the need

for continuous care and sustained support for individuals living with diabetes (Saudi Ministry of Health, 2024).

6 METHODOLOGY

Research Design

This study adopted a descriptive analytical cross-sectional design to examine social relationships as guidance- and counselling-oriented support systems among individuals living with type 2 diabetes. This design was considered appropriate for capturing patients' perceptions of formal and informal social relationships and their associated emotional, informational, and practical support within a real-world healthcare context.

Research Context

The study was conducted in diabetes and endocrinology centers affiliated with Hira General Hospital and Al-Noor Specialist Hospital in the city of Makkah, Saudi Arabia. These centres provide specialised medical care alongside ongoing health education and psychosocial support for individuals living with diabetes, making them suitable settings for examining guidance- and counselling-related relational dynamics.

Participants and Population

The study population consisted of adults diagnosed with type 2 diabetes mellitus and registered at the diabetes and endocrinology centers of the two hospitals. According to official hospital statistics, the total population comprised 47,012 patients, with 22,168 registered at Hira Hospital and 24,844 registered at Al-Noor Specialist Hospital.

A total sample of 381 participants was selected via stratified random sampling, ensuring proportional representation from both centers (180 from Hira Hospital and 201 from Al-Noor Specialist Hospital). The inclusion criterion was adult patients diagnosed with type 2 diabetes who had experienced diabetes-related complications and were receiving ongoing care at one of the selected centers.

Data collection instrument

Data were collected via a structured questionnaire developed specifically for this study. The questionnaire consisted of two main sections:

1. Demographic and clinical characteristics (e.g., age, sex, duration of illness).
2. Social relationships and support dimensions, comprising two main domains:
 - Formal social relationships (healthcare professionals)

- Informal social relationships (family)

Each domain included three dimensions: tangible support, informational support, and emotional support. Responses were recorded via a three-point Likert scale (agree, agree to some extent, disagree), which was deemed appropriate for capturing participants' perceptions in a clear and accessible manner.

Validity and Reliability

Content validity was established through expert review by specialists in social sciences, healthcare, and counselling. The questionnaire was subsequently piloted with a pilot sample of 30 participants, leading to minor refinements before full administration.

Internal consistency and construct validity were assessed via Pearson correlation coefficients, which revealed statistically significant relationships between individual items, their corresponding dimensions, and overall scale scores ($p < .05$). Reliability analysis via Cronbach's alpha indicated high internal consistency across all dimensions, with coefficients ranging from 0.812 to 0.887 and an overall reliability coefficient of 0.899, reflecting strong measurement reliability.

(Detailed validity and reliability statistics are provided in Appendix A.)

Data collection procedure

Following institutional approval, questionnaires were administered to participants during routine clinic visits. Participation was voluntary, and the respondents completed the questionnaire in a supportive clinical environment, with clarification provided when needed to ensure comprehension.

Ethical considerations

Ethical approval was obtained from the relevant institutional authorities. The participants were informed about the purpose of the study, assured of confidentiality and anonymity, and provided informed consent prior to participation. All the data were handled in accordance with ethical research standards.

Data analysis

The data were analysed via descriptive statistical techniques, including frequencies, percentages, means, and standard deviations, to examine patterns of perceived social relationships and support. These analyses were aligned with the study's guidance- and counselling-oriented research questions, which focused on how relational support is perceived and experienced by individuals living with diabetes.

7 DISCUSSION

The present study explored the nature of social relationships among individuals living with type 2 diabetes who attended diabetes and endocrinology centres in the city of Makkah, with a particular focus on how these relationships operate as guidance- and counselling-oriented support systems. Overall, the findings indicate that participants perceived their social relationships—both formal and informal—as moderately supportive. This suggests the existence of relational structures that offer some degree of emotional, informational, and tangible support but fall short of meeting the full range of psychosocial needs associated with living with a chronic condition.

From a counselling psychology perspective, relational and psychosocial support processes are widely regarded as central to helping individuals manage chronic stressors, including long-term health conditions such as diabetes, by strengthening emotional regulation and adaptive coping capacities (Journal of Counselling Psychology). Viewed through this lens, the moderate level of perceived social support observed in the present study highlights a potential gap between the availability of social relationships and their effectiveness in promoting sustained coping, self-regulation, and long-term self-management among individuals with type 2 diabetes.

With respect to formal social relationships, the findings suggest that interactions with healthcare professionals represent the primary source of informational and tangible support for participants. This pattern is consistent with key assumptions of social networks and structural theories, which emphasise the role of relational structures in both enabling and constraining individual behaviour through access to resources and guidance (Ritzer & Stepnisky, 2021). In this context, formal healthcare settings can be understood as structured relational environments that shape patients' opportunities to receive medical information, practical assistance, and professional guidance. Nevertheless, reliance on formal healthcare relationships alone may be insufficient to address the broader and ongoing psychosocial demands associated with long-term diabetes management.

Formal Social Relationships

The results demonstrated that formal social relationships with healthcare professionals were perceived as more supportive than informal relationships were, particularly in terms of informational support, followed by tangible support,

whereas emotional support was the lowest. This pattern reflects a healthcare model that prioritises diagnosis, treatment, and medical guidance, often at the expense of emotional containment and counselling-oriented engagement.

Although Saudi Arabia has made substantial investments in specialised diabetes care and has achieved significant progress in healthcare accessibility, the findings suggest that formal care interactions remain largely biomedical in orientation. This aligns with previous research indicating that patient-provider relationships frequently emphasise technical competence and information delivery while offering limited emotional or counselling support (Al-Alwani, 2022).

From the perspective of social network theory, healthcare professionals represent powerful nodes within patients' relational networks because of their control over critical resources such as medical knowledge and treatment access. However, the effectiveness of these relationships depends not only on resource availability but also on the quality of relational interaction. The relatively lower perception of emotional support suggests a gap between clinical care- and counselling-oriented practices, particularly in addressing patients' psychological adjustment and illness-related distress.

Informal Social Relationships

In contrast, informal social relationships with family members are characterised by stronger emotional support but comparatively weaker informational and tangible support. Emotional support ranked highest among the informal relationship dimensions, reflecting the culturally embedded role of family as a primary source of emotional reassurance and psychological safety within Saudi society.

However, the limited informational support provided by family members indicates that emotional closeness alone may be insufficient to facilitate effective diabetes management. Without adequate knowledge, guidance, and a shared understanding of disease management, family involvement may remain supportive at an emotional level while failing to contribute meaningfully to behavioural regulation, treatment adherence, or long-term self-management.

This finding is consistent with previous research demonstrating that family support can be either facilitative or constraining, depending on the extent to which family members possess accurate health-related knowledge and engage in constructive guidance rather than overprotection or disengagement (Gray, 2020; Nascimento Do, 2020).

Integrating Formal and Informal Support Systems

Collectively, the findings underscore the importance of viewing social relationships not as isolated sources of support but as interconnected systems that must function cohesively to support individuals living with chronic illness. Social network theory provides a useful explanatory framework, highlighting how the unequal distribution of resources across relational ties can lead to partial support that fails to meet patients' comprehensive psychosocial needs.

The moderate levels of perceived support identified in this study suggest that neither formal nor informal relationships alone are sufficient. Instead, effective diabetes management requires integrated guidance and a counselling approach that strengthens emotional engagement within healthcare settings while simultaneously enhancing informational and practical support within family networks.

Implications for Guidance and Counselling Practice

The findings of this study carry several important implications for guidance and counselling practices within healthcare and community contexts:

1. Enhancing Counselling-Oriented Care in Medical Settings

Healthcare professionals working with individuals living with diabetes may benefit from additional training in counselling skills, including empathic communication, emotional validation, and collaborative goalsetting. Integrating counselling principles into routine clinical interactions could strengthen the emotional dimension of formal social relationships and improve patients' psychological adjustment and engagement with treatment.

2. Family-focused guidance and psycho education

Given the central role of family in providing emotional support, structured family-based guidance programmes may enhance the effectiveness of informal social relationships. Providing families with accurate information about diabetes management, coping strategies, and supportive communication may transform emotional support into more comprehensive guidance-oriented assistance.

3. Development of Integrated Support Models

Counselling services should aim to bridge formal and informal support systems by facilitating communication between patients, healthcare providers, and family members. Integrated models of care that recognise patients as embedded within relational networks may promote the continuity of support and reduce fragmentation between medical treatment and psychosocial care.

4. Policy and Service Development

At a broader level, the findings highlight the need for healthcare policies that recognise guidance and

counselling as essential components of chronic illness management. The development of multidisciplinary teams that include counsellors, social workers, and health educators may enhance the sustainability and effectiveness of diabetes care services.

8 CONCLUSION

This study contributes to the growing body of literature examining social relationships among individuals living with diabetes by adopting a guidance and counselling perspective grounded in social network theory. The findings reveal that while both formal and informal social relationships are present and moderately supportive, they remain insufficiently integrated and uneven in their functional contribution to diabetes management.

Formal relationships with healthcare professionals provide strong informational support but limited emotional engagement, whereas informal family relationships offer emotional reassurance without adequate informational guidance. These imbalances underscore the need for counselling-oriented interventions that enhance the quality, coherence, and effectiveness of relational support systems.

By conceptualising social relationships as dynamic networks of guidance and support, this study highlights the potential for counselling-informed practices to strengthen patients' coping capacities, promote sustained self-management, and improve

overall wellbeing among individuals living with diabetes. Future research may build on these findings by exploring intervention-based models that actively integrate formal and informal support systems within culturally relevant frameworks.

Ethics Approval

Ethical approval for this study was obtained from the relevant institutional authority in accordance with national and institutional research guidelines. All participants were informed about the purpose of the study, and informed consent was obtained prior to participation

Use of Artificial Intelligence

Generative AI tools were used for language editing and clarity. The authors take full responsibility for the content of the manuscript.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest: The authors declare no conflict of interest.

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Appendix A Validity and Reliability Statistics of the Study Instrument

This appendix presents the detailed statistical analyses conducted to establish the validity and

reliability of the questionnaire used in the present study, which assessed formal and informal social relationships among individuals living with diabetes.

Table A1 Pearson correlation coefficients between individual items and their corresponding dimension scores

| Item No. | Tangible Support (Formal) | Informational Support (Formal) | Emotional Support (Formal) | Tangible Support (Informal) | Informational Support (Informal) | Emotional Support (Informal) |
|----------|---------------------------|--------------------------------|----------------------------|-----------------------------|----------------------------------|------------------------------|
| 1 | 0.657* | 0.657* | 0.657* | 0.657* | 0.657* | 0.657* |
| 2 | 0.684* | 0.684* | 0.684* | 0.684* | 0.684* | 0.684* |
| 3 | 0.430* | 0.430* | 0.430* | 0.430* | 0.430* | 0.430* |
| 4 | 0.712* | 0.712* | 0.712* | 0.712* | 0.712* | 0.712* |
| 5 | 0.674* | 0.674* | 0.674* | 0.674* | 0.674* | 0.674* |
| 6 | 0.491* | 0.491* | 0.491* | 0.491* | 0.491* | 0.491* |

Note. All correlation coefficients are statistically significant at $p < .05$.

Table A2 Pearson correlation coefficients between the dimension scores and overall scale scores

| Dimension/Scale | Correlation Coefficient |
|--|-------------------------|
| Tangible support (Formal relationships) | 0.735* |
| Informational support (Formal relationships) | 0.781* |
| Emotional support (Formal relationships) | 0.743* |
| Tangible support (Informal relationships) | 0.884* |
| Informational support (Informal relationships) | 0.913* |
| Emotional support (Informal relationships) | 0.468* |

Note. All correlation coefficients are statistically significant at $p < .05$, indicating strong construct validity for the questionnaire dimensions.

Table A3 Cronbach's alpha coefficients for the study instrument dimensions

| Dimension/Scale | Number of Items | Cronbach's Alpha |
|--|-----------------|------------------|
| Tangible support (Formal relationships) | 6 | 0.812 |
| Informational support (Formal relationships) | 6 | 0.857 |
| Emotional support (Formal relationships) | 6 | 0.832 |
| Formal social relationships (overall) | 18 | 0.849 |
| Tangible support (Informal relationships) | 6 | 0.870 |
| Informational support (Informal relationships) | 6 | 0.883 |
| Emotional support (Informal relationships) | 6 | 0.887 |
| Informal social relationships (overall) | 18 | 0.889 |
| Total questionnaire | 36 | 0.899 |

Note. Cronbach's alpha values indicate high internal consistency reliability across all dimensions and for the overall questionnaire.