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Caregivers' Mental Health Literacy and Medication Adherence in Psychotic Disorders: A Cross-Sectional Study

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ABSTRACT

Objective: Adherence to antipsychotic medication is essential for the long-term management of psychotic disorders, yet non-adherence remains common. This study aimed to examine the association between caregivers' mental health literacy (MHL) and patients' medication adherence in a psychiatric outpatient setting in Baghdad, Iraq.

Methods and Materials: A descriptive cross-sectional correlational study was conducted from March to June 2025 at a specialized psychiatric center. A purposive sample of 150 primary caregivers of patients diagnosed with psychotic disorders was recruited. Data were collected using a demographic questionnaire, the Mental Health Literacy Scale (MHLS), and the Medication Adherence Rating Scale (MARS). Caregivers completed the MHLS to assess their literacy, while caregivers rated MARS items as proxy reports of patients' adherence behavior. Data were analyzed using descriptive statistics, Spearman's correlation, and linear regression (IBM SPSS 28).

Findings: Most caregivers (72.7%) had low MHL, and only 27.3% demonstrated high literacy. Regarding adherence, 36.0% of patients were classified as highly adherent, 56.7% as moderately adherent, and 7.3% as poorly adherent. A moderate, positive, and statistically significant correlation was observed between caregivers' MHL and medication adherence ($\rho = 0.490$, $p < 0.01$). Regression analysis showed that MHL explained 26.2% of the variance in adherence scores ($R^2 = 0.262$).

Conclusion: Higher caregiver mental health literacy was associated with better medication adherence among patients with psychotic disorders, although the relationship was moderate and correlational. Integrating structured, culturally appropriate psychoeducation programs for caregivers into routine mental health services may help enhance literacy and support improved treatment continuity. Longitudinal and interventional studies are recommended to confirm causal pathways.

Keywords: Mental Health Literacy, Medication Adherence, Caregivers, Psychotic disorders, Psychoeducation.

Introduction

Psychotic disorders, including schizophrenia and schizoaffective disorder, are chronic conditions that profoundly affect social, occupational, and personal functioning (Perrotta, 2020). Effective management relies on long-term pharmacological treatment alongside psychosocial interventions (Jiakponna et al., 2024). Despite this, medication nonadherence remains a persistent challenge, with global estimates ranging from 40% to 60% (Radhi et al., 2023). Non-adherence contributes to relapse, hospitalization, suicide risk, and poorer long-term prognosis (Malih Radhi et al., 2023).

Research has identified a range of determinants of adherence, including side effects, illness insight, and stigma (Gibson et al., 2021). More recently, attention has shifted toward the role of caregivers, who are often family members responsible for supervising medication use, monitoring symptoms, and communicating with health services. Their ability to perform these roles is closely linked to their level of mental health literacy (MHL)—defined as knowledge and beliefs about mental disorders that support recognition, management, and prevention (Ullgren et al., 2018; Mohammad & Al Sayeh, 2025).

Higher caregiver MHL has been associated with improved medication monitoring, reduced stigma, and greater collaboration with healthcare providers (Andrade et al., 2022; Munawar et al., 2022; Alwan, 2025). Psychoeducation programs that strengthen caregiver literacy have demonstrated benefits in reducing relapse and enhancing adherence (Balat et al., 2025). However, the literature is inconsistent: some studies report weak or null associations (Raghavan et al., 2023; Yasir et al., 2018), underscoring the need to consider cultural context, health system resources, and family dynamics. Low- and middle-income countries, in particular, face persistent challenges, including limited access to accurate information, reliance on traditional beliefs, and stigma, which may undermine caregivers' capacity to support adherence (Ashimwe & Davoody, 2024; Tessier et al., 2023). Understanding this association in the Iraqi context can inform culturally sensitive family interventions that strengthen caregiver knowledge and promote sustained engagement with treatment.

Methods and Materials

This study employed a cross-sectional correlational design with regression analysis to examine the association between caregivers' mental health literacy (MHL) and medication adherence among patients with psychotic disorders. The study was conducted at a specialized psychiatric center in Baghdad, Iraq, from March to June 2025. The center provides outpatient services to a demographically diverse population with chronic psychiatric conditions, making it suitable for examining caregiver-related factors.

A total of 150 primary caregivers were recruited through purposive sampling. Inclusion criteria were: age ≥18 years, caregiver role for at least 3 months, fluency in Arabic, and willingness to provide informed consent. Caregivers with a diagnosed psychiatric disorder or caring for patients with comorbid substance use disorders were excluded. While this sampling strategy enabled focused recruitment, it limits the generalizability of the findings beyond the study population.

Instruments

Demographic Questionnaire: Developed by the researchers to capture basic caregiver and patient characteristics (e.g., caregiver age, sex, education, relationship to the patient; patient diagnosis and illness duration).

Mental Health Literacy Scale (MHLS): A 35-item instrument by O'Connor and Casey assessing recognition, risk factors, self-help strategies, and attitudes toward help-seeking (O'Connor & Casey, 2015). Items are rated on a five-point Likert scale; higher scores reflect greater literacy. The Arabic version was translated and reviewed for content validity, but has not undergone full construct validation in Iraq.

Medication Adherence Rating Scale (MARS): A 10-item measure of medication-taking behavior (Thompson et al., 2000). Although typically self-reported by patients, in this study, caregivers completed the scale based on observed patient behavior. This approach raises potential validity limitations, which are acknowledged in the interpretation of the findings.

All instruments were translated using forward–backward translation by bilingual experts. A panel of five specialists in psychiatric nursing and psychology assessed content validity. A pilot study with 30

caregivers (not included in the final sample) showed good internal consistency (MHLS α = 0.88; MARS α = 0.84). No confirmatory factor analysis or construct validation was conducted, which represents a limitation.

Data Collection

Data were collected during routine outpatient visits. Literate participants self-completed questionnaires, while trained psychiatric nurses assisted those with limited literacy using standardized scripts. Each session lasted 20–30 minutes.

Analysis

Data were analyzed using IBM SPSS version 28. Descriptive statistics (means, standard deviations, frequencies) summarized sample characteristics. Pearson's correlation coefficient was used to examine the association between MHL and medication adherence. Multiple linear regression was applied to assess the predictive value of MHL while controlling for potential confounders (e.g., caregiver age, education, caregiving duration). Statistical significance was set at $p < 0.05$.

Ethical Approval

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. It was carried out with the patient's verbal and informed consent before sample collection. The study protocol and the subject information and consent form were reviewed and approved by a local ethics committee under document number 78 (March 24 2025).

Findings and Results

The study examined patterns among 150 caregivers and reported a mean age of 51.49 ± 13.35 years. Age groups were distributed as follows: 20–29 years (17.3%), 30–39 years (25.3%), 40–49 years (28%), 50–59 years (16%), and 60+ years (13.4%). Females comprised a slight majority (54.7%) compared with males (45.3%). Regarding education, most caregivers had a secondary school diploma or higher: 22.7% had a secondary diploma, 20% had a diploma, 24% had a bachelor's diploma, and 13.3% had postgraduate studies; 8% were illiterate, and 12% were literate. Most caregivers were married (65.3%); 20% were unmarried, 5.3% were separated, and 9.3% were widowed. Occupationally, homemakers constituted the largest group (38.7%), followed by employees (18.7%), students (14.7%), self-employed individuals (16%), and retired persons (12%). The majority (60%) lived in urban areas, whereas 40% lived in rural regions (Table 1).

Table 1

Distribution of Caregivers Socio-demographic Characteristics

Factors	Classification	No.	%
Age/years	20-29	26	17.3
	30-39	38	25.3
	40-49	42	28.0
	50-59	24	16.0
	60 and above	20	13.4
	M ±Std. Deviation	51.49±13.354	
Sex	Male	68	45.3
	Female	82	54.7
Education Level	Illiterate	12	8.0
	Literate	18	12.0
	Secondary School	34	22.7
	Diploma	30	20.0
	Bachelor's Degree	36	24.0
	Postgraduate Studies	20	13.3
Marital Status	Single	30	20.0
	Married	98	65.3
	Separated	8	5.3
	Widowed	14	9.3
Occupation	Employee	28	18.7
	Self-employed	24	16.0
	Retired	18	12.0
	Student	22	14.7

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	Housewife	58	38.7
Residence	Rural	60	40.0
	Urban	90	60.0

No. Number; %= Percentage; M ± Std. Deviation= Mean & Standard Deviation

Table 2

Overall Mental Health Literacy Levels among Caregivers

Domains	Score	No.	%	M ± SD
Mental Health Literacy	Low	109	72.7	81.99±8.026
	High	41	27.3	
	Total	150	100.0	
Medication adherence levels	Low	11	7.3	30.63±6.205
	Moderate	85	56.7	
	High	54	36.0	
	Total	150	100.0	

M ± Std. Deviation= Mean & Standard Deviation

Table 2 provides an outline of the Mental Health Literacy (MHL) levels and medication adherence ranges of many of the 150 caregivers of sufferers with psychotic ailments. The findings show that a majority of caregivers (72.7%) had low mental health literacy, while only 27.3% demonstrated high literacy, with a median score of 81.99 ± 8.03. This shows a usually low stage of knowledge and awareness of mental health among caregivers in the sample. In terms of medication adherence, 36.0% of caregivers suggested excessive adherence, even as the majority (56.7%) exhibited slight adherence, and only 7.3% confirmed low adherence. The mean adherence score turned into 30.63 ± 6.21.

Table 3

Association between Mental Health Literacy and Medication Adherence of Caregivers

Correlation Statistics		1	2
1. MHL	Spearman's rho	1	.490**
	p-value	-	.000
2. Medication adherence	Spearman's rho	.490**	1
	p-value	.000	

***.Correlation is significant at the 0.01 level (2-tailed).*

Table 3 presents the statistical association between caregivers' mental health literacy (MHL) and their medication adherence stages, assessed using Spearman's rank correlation. The effects monitor a mild, positive, and statistically significant correlation between MHL and medication adherence ($\rho = 0.490$, $p < 0.01$), indicating that caregivers with higher mental health literacy tend to have higher adherence to prescribed medication regimens for their patients.

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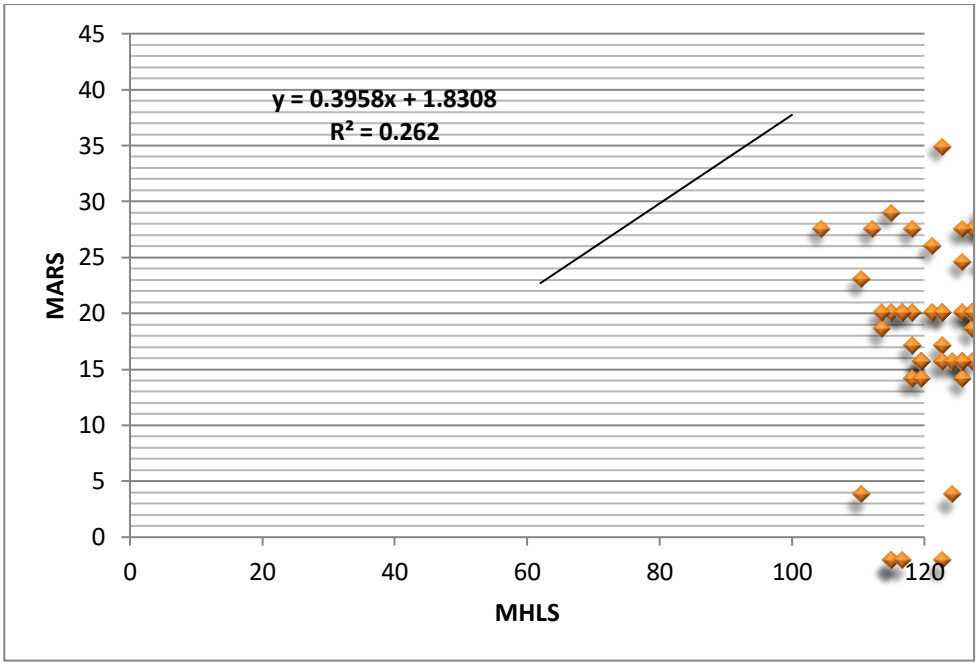

Figure 1.

Relationship between MHLS and MARS

Figure 1 shows a clear, high-quality linear relationship between mental health literacy and medication adherence. The regression equation ($y = 0.3958x + 1.8308$) and a relatively higher R^2 (0.262) indicate that mental health literacy reasonably predicts adherence behavior. This supports the robust, statistically significant Spearman correlation ($r = 0.490$, $p = .000$) reported in Table 4, suggesting that increasing caregiver literacy is likely to enhance medication adherence among patients with psychosis.

Table 4

Cross-tabulation of Mental Health Literacy Level and Medication Adherence

Mental Health Literacy	Low Adherence	Moderate Adherence	High Adherence	Total
Low	9 (8.3%)	70 (64.2%)	30 (27.5%)	109
High	2 (4.9%)	15 (36.6%)	24 (58.5%)	41
Total	11 (7.3%)	85 (56.7%)	54 (36.0%)	150

Table 4 offers a clear picture of the connection between caregivers' mental health literacy levels and their medication adherence scores. The facts suggest that a considerably better percentage of caregivers with high mental health literacy demonstrate high medication adherence in comparison to people with low literacy. Conversely, a majority of those with low literacy fall into the mild-adherence group, with a smaller fraction achieving high adherence. This desk strengthens the correlation findings by providing categorical visual evidence that better mental health literacy is associated with increased adherence outcomes.

Discussion and Conclusion

This study identified a moderate, statistically significant association between caregivers' mental health literacy (MHL) and patient medication adherence ($\rho = 0.490$, $p < 0.01$). Regression analysis indicated that MHL explained just over one-quarter of the variance in adherence, suggesting that while caregiver knowledge contributes to adherence behaviors, other factors also influence treatment continuity. These results highlight the potential importance of caregiver education, but should be interpreted cautiously.

Several methodological considerations limit the strength of these findings. First, purposive sampling of 150 caregivers restricts generalizability beyond the

study setting. Second, adherence was measured indirectly, with caregivers completing the MARS on behalf of patients. Although caregivers are closely involved in treatment supervision, proxy reporting may not fully reflect patients' medication-taking behaviors and could introduce bias. Third, while the Arabic translations of MHLS and MARS demonstrated acceptable internal consistency (α = 0.84–0.88), no confirmatory factor analysis or wider construct validation was conducted, limiting confidence in their applicability to the Iraqi context.

The observed correlation aligns with prior studies reporting that caregivers with higher literacy are better able to monitor treatment, reduce stigma, and promote adherence (Chow et al., 2024; Webkamigad et al., 2020). However, evidence is mixed: other investigations, including systematic reviews, have found small or inconsistent effects of family education on adherence (Elywy et al., 2023; Treichel et al., 2020). This variability may reflect cultural context, caregiver burden, and health system support. Reverse causality is also possible: more adherent patients may provide caregivers with more opportunities to learn about illness management, thereby increasing their MHL. Longitudinal designs are needed to clarify the direction of these relationships.

Global evidence supports family psychoeducation as a promising but variable intervention. A Cochrane review reported reductions in relapse and improvements in adherence with family involvement, though effects diminished over time (Oliveira & Dias, 2023). More recent meta-analyses (2020–2023) suggest moderate benefits of psychoeducation on adherence and symptom outcomes, but highlight heterogeneity across studies and emphasize the importance of cultural tailoring (Kuipers et al., 2025; Shalan et al., 2024). In low- and middle-income countries such as Iraq, structural barriers, stigma, and reliance on traditional beliefs may attenuate the impact of education alone (Karstensen et al., 2025).

This study adds to the evidence that caregiver MHL is associated with better adherence among patients with psychotic disorders. However, the relationship is moderate and subject to methodological and contextual constraints. Future research should employ representative sampling, validated tools, and longitudinal or interventional designs to test whether enhancing caregiver literacy reliably improves adherence and patient outcomes.

This study found a moderate positive association between caregivers' mental health literacy (MHL) and medication adherence among patients with psychotic disorders. Caregivers with higher MHL were more likely to report better adherence, though many still demonstrated limited knowledge despite having some formal education. These findings suggest that caregiver literacy may support treatment continuity, but the relationship should be interpreted as correlational rather than causal.

While the results are consistent with existing literature, they do not establish that increasing caregiver literacy directly improves adherence. Nevertheless, the findings underscore the potential value of integrating psychoeducational interventions into mental health services to equip caregivers with practical knowledge, reduce stigma, and enhance supportive care. Such initiatives could be further evaluated through longitudinal and experimental studies.

Limitation

The study's cross-sectional design prevents causal inference, and purposive sampling from a single hospital limits generalizability. Adherence was assessed through caregiver self-report, which may introduce bias. Other unmeasured factors (e.g., symptom severity, caregiver burden) may also influence both literacy and adherence.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Declaration of Helsinki, which provides guidelines for ethical research involving human participants. Ethical considerations in this study included the fact that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

References

Alwan, I. H. (2025). Factors Influencing Stigma Toward Mental Illness Among Students at the University of Baghdad. *International Journal of Body, Mind & Culture (2345-5802)*, *12*(5). https://doi.org/10.61838/ijbmc.v12i5.945

Andrade, C., Tavares, M., Soares, H., Coelho, F., & Tomás, C. (2022). Positive mental health and mental health literacy of informal caregivers: A scoping review. *International journal of environmental research and public health*, *19*(22), 15276. https://doi.org/10.3390/ijerph192215276

Ashimwe, A., & Davoody, N. (2024). Exploring Health Care Professionals' Perspectives on the Use of a Medication and Care Support System and Recommendations for Designing a Similar Tool for Family Caregivers: Interview Study Among Health Care Professionals. *JMIR Medical Informatics*, *12*, e63456. https://doi.org/10.2196/63456

Balat, K. Z., Laftah, S. A., & Radhi, M. (2025). The relationship between psychological distress and quality of life among women undergoing mastectomy in Iraq: A descriptive correlational study. *National Journal of Community Medicine*, *16*(1), 20-27. https://doi.org/10.55489/njcm.160120254716

Chow, J. Y. A., Yeo, Y. T. T., & Goh, Y. S. (2024). Effects of Psychoeducation on Caregivers of Individuals Experiencing Schizophrenia: A Systematic Review and Meta-Analysis. *International Journal of Mental Health Nursing*, *33*(6), 1962-1987. https://doi.org/10.1111/inm.13421

Elywy, G. J., Radhi, M. M., & AlEqabi, Q. A. K. (2023). Relationship between social support and self-hardiness among women with breast cancer in Nasiriyah, Iraq. *Journal of the Pakistan Medical Association*, *73*(9), S9-14. https://doi.org/10.47391/JPMA.IQ-02

Gibson, J., Coupe, J., & Watkins, C. (2021). Medication adherence early after stroke: using the Perceptions and Practicalities Framework to explore stroke survivors', informal carers' and nurses' experiences of barriers and solutions. *Journal of Research in Nursing*, *26*(6), 499-514. https://doi.org/10.1177/1744987121993505

Jiakponna, E. C., Agbomola, J. O., Ipede, O., Karakitie, L., Ogunsina, A., Adebayo, K., & Tinuoye, M. (2024). Psychosocial factors in chronic disease management: implications for health psychology. *International Journal of Science and Research Archive*, *12*(2), 117-128. https://doi.org/10.30574/ijsra.2024.12.2.1219

Karstensen, V., Hooshmandi, R., & Bastholm, M. (2025). Mental health literacy in adolescents: a qualitative study of knowledge, attitudes, and beliefs. *Journal of Research and Health*, *15*(1), 15-26. https://doi.org/10.32598/JRH.15.1.2473.1

Kuipers, S., Elzinga-Hut, C., Rosema, B., Sanches, S., Boertien, D., Stavenuiter, B., Spoelstra, S., Pijnenborg, G., & Boonstra, N. (2025). Psychoeducation for Relatives of Young Adults with First-Episode Psychosis: A Qualitative Exploration of Needs and Experiences. *Nursing Reports*, *15*(6), 197. https://doi.org/10.3390/nursrep15060197

Malih Radhi, M., Juma Elywy, G., & Abbas Khyoosh Al-Eqabi, Q. (2023). Burdens among wives of disabled people in the light of some social variables. *Iranian Rehabilitation Journal*, *21*(3), 473-484. https://doi.org/10.32598/irj.21.3.1765.3

Mohammad, W. T., & Al Sayeh, A. M. I. (2025). Metabolic Complications of Antipsychotic Treatment in Newly Diagnosed Psychotic and Mood Disorders: A Case-Control Study on Dyslipidemia and Hyperglycemia. *International Journal of Body, Mind & Culture (2345-5802)*, *12*(5). https://doi.org/10.61838/ijbmc.v12i5.910

Munawar, K., Mukhtar, F., Choudhry, F. R., & Ng, A. L. O. (2022). Mental health literacy: A systematic review of knowledge and beliefs about mental disorders in Malaysia. *Asia-Pacific Psychiatry*, *14*(1), e12475. https://doi.org/10.1111/appy.12475

O'Connor, M., & Casey, L. (2015). The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry research*, *229*(1-2), 511-516. https://doi.org/10.1016/j.psychres.2015.05.064

Oliveira, C. T. d., & Dias, A. C. G. (2023). How can psychoeducation help in the treatment of mental disorders? *Estudos de Psicologia (Campinas)*, *40*, e190183. https://doi.org/10.1590/1982-0275202340e190183

Perrotta, G. (2020). Psychotic spectrum disorders: definitions, classifications, neural correlates and clinical profiles. *Annals of Psychiatry and Treatment*, *4*(1), 070-084. https://doi.org/10.17352/apt.000023

Radhi, M. M., Al-Eqabi, Q. A. K., & Hindi, N. K. K. (2023). Rehabilitation problems of people with motor disabilities at the Babylon Center for Rehabilitation of the disabled. *Medical Journal of Babylon*, *20*(4), 838-843. https://doi.org/10.4103/MJBL.MJBL_674_23

Raghavan, R., Brown, B., Horne, F., Kumar, S., Parameswaran, U., Ali, A. B., Raghu, A., Wilson, A., Svirydzenka, N., & Venkateswaran, C. (2023). Stigma and mental health problems in an Indian context. Perceptions of people with mental disorders in urban, rural, and tribal areas of Kerala. *International Journal of Social Psychiatry*, *69*(2), 362-369. https://doi.org/10.1177/00207640221091187

Shalan, A. A., Hindi, N. K. K., Radhi, M. M., & Chabuck, Z. A. G. (2024). Prevalence of genital herpes simplex type 2 in Babylon province for the last 3 years: A retrospective descriptive data analysis. *Medical Journal of Babylon*, *21*(1), 170-173. https://doi.org/10.4103/MJBL.MJBL_679_23

Tessier, A., Roger, K., Gregoire, A., Desnavailles, P., & Misdrahi, D. (2023). Family psychoeducation to improve outcome in caregivers and patients with schizophrenia: a randomized clinical trial. *Frontiers in Psychiatry*, *14*, 1171661. https://doi.org/10.3389/fpsyt.2023.1171661

Thompson, K., Kulkarni, J., & Sergejew, A. (2000). Reliability and validity of a new Medication Adherence Rating Scale (MARS) for the psychoses. *Schizophrenia Research*, *42*(3), 241-247. https://doi.org/10.1016/S0920-9964(99)00130-9

Treichel, C. A. d. S., Jardim, V. M. d. R. Kantorski, L. P., & Alves, P. F. (2020). Gender differences in the manifestation of burden

among family caregivers of people with mental disorders. *International Journal of Mental Health Nursing*, *29*(6), 1120-1130. https://doi.org/10.1111/inm.12752

Ullgren, H., Tsitsi, T., Papastavrou, E., & Charalambous, A. (2018). How family caregivers of cancer patients manage symptoms at home: a systematic review. *International journal of nursing studies*, *85*, 68-79. https://doi.org/10.1016/j.ijnurstu.2018.05.004

Webkamigad, S., Rowe, R., Peltier, S., Froehlich Chow, A., McGilton, K. S., & Walker, J. D. (2020). Identifying and understanding the health and social care needs of Indigenous older adults with multiple chronic conditions and their caregivers: a scoping review. *BMC geriatrics*, *20*(1), 145. https://doi.org/10.1186/s12877-020-01552-5

Yasir, A. A., Qassim, W. J., & Radhi, M. M. (2018). Assessing the feeling of psychological loneliness among wives of martyrs in the light of some social variables in Babylon Governorate/Iraq. *Journal of Pharmaceutical Sciences and Research*, *10*(1), 40-44. https://www.researchgate.net/profile/Amean-Yasir-2/publication/322939929_Assessment_the_feeling_of_psychological_loneliness_among_wives_of_martyrs_in_the_light_of_some_social_variables_in_Babylon_governorateIraq/links/5a9b9fe7aca2721e3f304374/Assessment-the-feeling-of-psychological-loneliness-among-wives-of-martyrs-in-the-light-of-some-social-variables-in-Babylon-governorate-Iraq.pdf