Table 1 **Quality assessment of included studies**

S/No.	Study	Study design	Key findings	Quality assessment	Effect size & statistical insights
1	Shamsi SA et al 2021 (10)	Randomised control trial	Sodium intake, systolic & diastolic blood pressure significantly reduced	Fair	Reduction in BP was statistically significant (P = 0.021, P < 0.001, P = 0.011).
2	Yang L et al 2024 (11)	Cross-sectional	40% achieved LDL goals, 30% met waist circumference targets	Fair	Older age and lower education levels were significant predictors of non-adherence (OR = 2.1, 95% CI: 1.5–3.0).
3	Aynalem GA et al 2021 (11)	Cross-sectional	53.6% had poor adherence; men adhered better than women	Good	Patients diagnosed within <5 years had 1.86 times higher odds of non-adherence (AOR = 1.86, 95% CI: 1.3–2.4).
4	Cabral AC et al 2022 (13)	Cross-sectional	80% had awareness of blood pressure goals, but misconceptions about treatment	Good	Misconceptions about medication discontinuation significantly impacted adherence (P = 0.003).
5	Abdalla AA, 2021 (14)	Cross-sectional	Salt restriction knowledge was 93.8%, but exercise adherence was low	Good	Lack of motivation was a primary barrier to exercise adherence (P = 0.027).
6	Shilole JN et al 2024 (15)	Cross-sectional	Adherence to physical activity: 37.9%, fruit/vegetable intake: 22.2%	Good	Knowledgeable patients were 2.32 times more likely to comply (AOR = 2.32, 95% CI: 1.9–3.0).
7	Cherfan M et al 2020 (9)	Cross-sectional	56.1% had uncontrolled hypertension; men at higher risk	Good	Obesity and alcohol consumption significantly increased BP risk (P < 0.05).
8	Abaynew Y, Hussien M, 2021 (16)	Cross-sectional	Barriers included low awareness, resource limitations, social eating, and traditional medicine use	Good	Lack of hypertension knowledge and financial constraints were key non-adherence factors (P < 0.05).
9	Fentaw Z, Adamu K, 2022 (17)	Cross-sectional	Poor adherence was 83.2%; self-employment and low social support were key predictors	Good	Self-employed individuals had 2.68 times higher odds of poor adherence (AOR = 2.68, 95% CI: 1.8–3.5).
10	Abdeslam EK et al 2023 (18)	Cross-sectional	Physical activity adherence (43.4%) was higher in males and younger individuals	Fair	Sedentary time averaged 37.19±18.92 hours/week, influencing poor adherence (p<0.05).
11	Odunaye-Badmus SO et al 2024 (19)	Cross-sectional	BP control was 56.8%. Adherence rates: physical activity (45%), medication (71.5%)	Fair	No significant correlation between self-care practices and BP control (P = 0.27).
12	Shim JS et al 2020 (20)	Cross-sectional	Dietary adherence linked to awareness of lifestyle importance and self-efficacy	Fair	Strong association between self-efficacy and dietary adherence (OR = 6.29, 95% CI: 3.1–9.2).
13	Abza LF et al 2024 (21)	Cohort study	Good self-care adherence (50.8%) linked to normal BMI and strong social support	Good	Social support was a strong predictor of adherence (AOR = 3.842, 95% CI: 2.5–5.2).
14	Sun K et al 2023 (22)	Cross-sectional	80% of patients received physician advice, but obesity and smoking remained challenges	Fair	Physician advice improved adherence, but obesity was a significant risk factor (P = 0.018).
15	Espinel E et al 2023 (23)	Cross-sectional	Full adherence to lifestyle changes improved BP, BMI, and reduced medication burden	Good	BP reduction was significant with multidisciplinary lifestyle interventions (P < 0.01).
16	Alshuhri M et al 2024 (24)	Cross-sectional	62.4% had uncontrolled hypertension; smoking and stopping medication increased risks	Fair	Higher education reduced hypertension risks (AOR = 0.795, 95% CI: 0.6–1.0).
17	Gaffari-Fam S et al 2022 (25)	Cross-sectional	Health literacy explained 33.9% of the variance in healthy lifestyles	Fair	Better decision-making and access to health information improved adherence (P = 0.005).
18	Dhakal A et al 2022 (26)	Cross-sectional	Overall adherence to lifestyle modifications was 20.8%	Good	Younger patients and those with higher education had significantly better adherence (P = 0.021).