# Valliant Foundation Research Assistant Code of Conduct & Requirements

## I. Overview of the Role

Research Assistants (RAs) play a critical role in ensuring the accuracy and integrity of **systematic reviews and meta-analyses** conducted by the Valliant Foundation. Their primary responsibility is to perform **data extraction** from relevant studies while maintaining high ethical and academic standards.

### What Research Assistants Get Out of This Role:

✔ **Hands-on Research Experience**: Gain valuable experience in systematic reviews and meta-analysis, which is beneficial for **graduate school, medical school, and research careers**.
✔ **Skill Development**: Learn **data extraction, quality assessment, and literature review techniques** used in high-impact research.
✔ **Acknowledgment in Publications**: Research Assistants who complete the required contributions will be **recognized in the acknowledgments section** of published papers.
✔ **Opportunities for Advancement**: RAs who demonstrate **exceptional dedication and analytical skills** may apply for an **authorship position** (see Section IV).
✔ **Networking & Letters of Recommendation**: RAs who meet the expectations and maintain good standing may be considered for **letters of recommendation and future research opportunities** at the discretion of the **Chief of Research**.

---

## II. Responsibilities & Weekly Requirements

### Data Extraction Requirements:

📌 **Research Assistants must complete a minimum of 5 data extraction forms per week.**

- **A "week" is defined as Sunday-Saturday.**
- Each **data extraction form must be fully completed** and meet quality standards before submission.
- RAs must independently review studies, extract relevant data, and submit their forms on time.

📌 **To be acknowledged in the final publication, RAs must complete at least 25 data extraction forms.**

- If a research assistant **drops out before reaching 25 extractions**, acknowledgment **will be at the discretion of the Chief of Research**.

📌 **RAs must notify their supervisor immediately if they have questions or concerns.**

- If an RA **cannot complete the required 5 extractions per week**, they must **submit a written explanation** to **valliantfoundation@gmail.com**.
- **Supervisors or the Chief of Research will determine whether a warning is issued** based on the reason provided.

---

# III. Code of Conduct

## 1. Academic Integrity & Ethical Conduct

- **Plagiarism, falsifying data, or modifying study results** will result in **immediate termination (L-4)** from the research team.
- RAs must extract **data exactly as reported in the study—do not estimate, alter, or fill in missing values on your own**.
- RAs must **conduct independent reviews** and **not discuss results with other assistants** before submission.

## 2. Professional Communication

- If an RA has **questions, conflicts, or difficulties**, they should email **valliantfoundation@gmail.com** or contact their direct supervisor.
- Research assistants may also **ask questions in the research assistant group chat**.
- **All professional communication must be respectful, clear, and appropriate.**

## 3. Confidentiality & Data Protection

- **RAs must not share unpublished research materials, data, or discussions** outside of the research team.
- Violations of confidentiality will result in **immediate termination (L-4)**.

## 4. Attendance & Performance Expectations

- **Each RA is responsible for submitting their 5 required extractions weekly.**
- RAs must **adhere to deadlines** and communicate any challenges **before the due date**.
- If an RA falls behind on submissions, the following **corrective action system** will apply:

### Corrective Action System for Missed Weekly Requirements

- **First Offense (L-1):** Formal **written warning**.
- **Second Offense (L-2):** Second **formal warning**.
- **Third Offense (L-3):** Final warning before termination.
- **Fourth Offense (L-4): Termination from the research team**, with no eligibility for **letters of recommendation or references**, at the discretion of the Chief of Research.

📌 **If an RA has a valid reason for missing a submission, they must submit a written explanation to valliantfoundation@gmail.com.**

- A **supervisor or the Chief of Research** will determine whether a warning will be issued.

---

# IV. Authorship Opportunities

📌 **Research Assistants are NOT automatically listed as authors.**

- Contributions will be **acknowledged in the acknowledgments section** of the paper if the RA meets the **minimum required 25 extractions**.
- **If an RA wishes to be considered for authorship**, they must:
    1. **Be willing to take on additional responsibilities beyond data extraction.**
    2. **Submit a resume and cover letter to valliantfoundation@gmail.com** requesting an authorship interview.
    3. **Demonstrate strong research skills and commitment to the project.**

📌 **Authorship positions will require additional contributions**, such as:

- Conducting **data analysis or statistical work**.
- Writing sections of the manuscript.
- Assisting with **editing and journal submission processes**.

---

# V. Reporting & Contacting Supervisors

📌 **Research Assistants must notify their supervisor** every time they complete a study or have a question.
📌 **Each RA works independently** and will **NOT have access to other assistants' data extraction forms** to ensure unbiased assessments.
📌 **For all questions or concerns, RAs should:**
✔ Email **valliantfoundation@gmail.com**.

✔ Contact their **direct supervisor**.
✔ Ask in the **research assistant group chat** if the question is general.

---

# Final Agreement

By joining the research team, all Research Assistants agree to:
✅ **Adhere to the data extraction requirements and deadlines.**
✅ **Follow the Code of Conduct, maintaining professional integrity.**
✅ **Complete at least 25 extractions for acknowledgment.**
✅ **Understand that authorship requires additional commitment.**

🔹 **Failure to meet these expectations may result in termination from the research team.**

📌 **If you have read and understood this document, please confirm your acceptance by emailing valliantfoundation@gmail.com with the subject line: "Research Assistant Agreement Confirmation."**

🚀 **Welcome to the team, and thank you for your contributions to advancing research!** 😊

Definitions in the extraction:

**Study design:** ie experimental study, observational study, systematic review (this study)
**Sample size:** size of the sample that's being tested in the study
**Study's Definition of homelessness-** Homeless definitions could vary wildly, from being unhoused on the street, to being in a camp, to being in a shelter. Make sure you mark what their definition is.
**List mental health conditions:** What mental health conditions have viability and relevance in the study
**% of mental health conditions in the study population:** How many of the homeless population are affected by mental health conditions.
**Aba1c outcomes:** what the HbA1c levels were in the study
**Hospitalization rates:** mark down hospitalization rates of the population in the study
**DKA rates- (Diabetic ketoacidosis)** a disease typically seen in type 1 diabetes where the insulin in the body gets dangerously low leading to an increase in blood sugar, buildup of ketones in the blood making it dangerously acidic. So just mark the rates for this if mentioned in the study.
**Mental health assessment-** How did the researchers track mental health of the population being studied

# Research Assistant Guide: Independent Review & Data Extraction Process

## Overview

As a research assistant, your role is to **independently review and extract data** from studies relevant to the meta-analysis. To ensure accuracy and minimize bias, **two independent reviewers** will extract data from each study before comparing results. This guide outlines how to **search for studies, extract data, perform quality assessments, and report findings**.

---

## Step 1: Searching for Studies

To find relevant studies, use the databases listed below. These sources contain **peer-reviewed research** and are commonly used in systematic reviews and meta-analyses.

### Recommended Databases & Search Platforms

#### 📚 1. OneSearch (SFSU Library)

- Log into **OneSearch** with your SFSU credentials.
- Select **"Advanced Search"** and filter for **peer-reviewed journal articles**.
- Use **Boolean search terms** (e.g., `"risk factors" AND "homeless populations" AND "mental health outcomes"`).
- Apply **filters for publication year, language (English preferred), and study type** (quantitative or mixed-methods).

#### 🔍 2. PsycINFO (Psychology & Mental Health Studies)

- Use APA PsycINFO for **research on mental health, trauma, and victimization**.
- Try search queries like `("homeless individuals" OR "unstably housed") AND ("mental health" OR "PTSD") AND ("prevalence" OR "risk factors")`.

#### 📊 3. PubMed (Medical & Public Health Research)

- Search via PubMed.
- Use MeSH terms like `"Homeless Persons"`, `"Mental Disorders"`, and `"Prevalence Studies"`.

📝 **4. Google Scholar (Free & Open-Access Studies)**

- Go to Google Scholar.
- Use advanced search features to **filter by publication date** and **exclude patents & citations**.

📑 **5. Other Free & Open-Access Sources**

- **DOAJ (Directory of Open Access Journals)** – https://doaj.org/
- **MedRxiv (Preprints for Health Research)** – https://www.medrxiv.org/
- **National Library of Medicine (NLM)** – https://www.nlm.nih.gov/
- **Grey Literature Reports (Gov & NGO Data)** – https://www.greynet.org/

📌 **Important:** Before selecting a study, carefully review the **inclusion and exclusion criteria** outlined in the research proposal. If you are **unsure whether a study qualifies**, ask your **supervisor** before proceeding.

---

# Step 2: Screening and Selecting Studies

Once you have identified a study, follow the **criteria outlined in the research proposal** to determine if it is suitable for the meta-analysis.

## Inclusion Criteria (What the Study MUST Have)

✅ The study **examines the specific population, exposure, and outcome** required by the research proposal.
✅ The study **reports numerical data**, such as prevalence rates, odds ratios (OR), relative risk (RR), or confidence intervals (CI).
✅ The study uses **quantitative or mixed-methods research** (cohort, case-control, or cross-sectional).

## Exclusion Criteria (What the Study MUST NOT Have)

❌ The study **does not specify the target population** or groups participants together with non-relevant populations.
❌ The study **does not provide extractable numerical data** (e.g., it only provides qualitative findings).
❌ The study is **a review article or opinion piece** rather than original research.

📌 **If you are unsure whether a study meets the criteria, contact your supervisor before extracting data.**

---

# Step 3: Copying & Filling Out the Data Extraction Form

Once you have selected a study that meets the **inclusion criteria**, follow these steps:

1️⃣ **Make a copy of the Data Extraction Form** from the official **Google Documents template**.
2️⃣ Rename the document using this format:

- **`DataExtraction_AuthorYear_Initials.doc`**
- Example: `DataExtraction_Smith2023_JV.doc`

3️⃣ **Fill out all sections** of the form, including:

- **Study characteristics** (Author, Year, Study Design, Sample Size).
- **Population details** (Demographics, homelessness definition).
- **Outcome measures** (Prevalence rates, risk factors, effect sizes).
- **Statistical values** (Odds Ratios, Relative Risk, Confidence Intervals).
- **Missing data** (Mark as `"NR"` if not reported).

📌 **Important: Copy and paste ALL statistical data directly from the study. Do NOT summarize**—extract exact numbers, tables, and relevant sections.

---

# Step 4: Performing a Quality Assessment

After completing the **data extraction**, assess the study's quality using the appropriate **Quality Assessment Tool**.

### Which Quality Assessment Tool Should You Use?

✔ **Cohort or Cross-Sectional Study** → Use the **Newcastle-Ottawa Scale (NOS-Cohort)**.
✔ **Case-Control Study** → Use the **Newcastle-Ottawa Scale (NOS-Case Control)**.
✔ **Qualitative Study with Some Numerical Data** → Use the **CASP Checklist**.

📌 **Once you complete the quality assessment:**
1️⃣ **Record the final quality score** in the **data extraction form**.
2️⃣ **Save a separate copy of the quality assessment form** using this format:

- **`QualityAssessment_AuthorYear_Initials.doc`**
- Example: `QualityAssessment_Smith2023_JV.doc`

3️⃣ **Document any concerns or bias risks** in the notes section.

---

# Step 5: Independent Review Process

**To maintain objectivity, each study must be reviewed by two independent research assistants.**

**📌 Rules for Independent Review:**
**✔ You will NOT have access to anyone else's data extraction forms or quality assessments.**
**✔ Once both independent reviewers have completed their extraction, their data will be compared for consistency.**
**✔ If discrepancies arise, the supervisor will review the study and make a final decision.**

---

# Step 6: Reporting Completed Studies & Asking Questions

**📌 Once you complete data extraction and quality assessment for a study:**
1️⃣ **Notify your supervisor via email** (`valliantfoundation@gmail.com`) or in the **research assistant group chat**.
2️⃣ **If you have a question:**

- Email **valliantfoundation@gmail.com**
- Contact your **direct supervisor**
- Post in the **research assistant group chat**
  3️⃣ **If you encounter conflicting data or issues with extraction, DO NOT discuss it with other research assistants.**
- **All questions should go through your supervisor** to ensure accuracy and independence in the review process.

---

# Final Checklist Before Submitting Your Work

**✅ I have searched for and selected a study based on the inclusion/exclusion criteria in the research proposal.**
**✅ I have copied the Data Extraction Form and correctly named it using the study author, year, and my initials.**
**✅ I have extracted all relevant data, including exact statistics (prevalence, OR, RR, CI).**
**✅ I have completed a quality assessment using the appropriate tool and saved it separately.**
**✅ I have notified my supervisor that the study has been completed.**

---

# Conclusion

This guide ensures **consistency, accuracy, and independence** in our data extraction process. Following these steps will help produce **high-quality systematic reviews and meta-analyses** that contribute to **evidence-based research and policy development**.

If you have **ANY questions or issues**, always **contact your supervisor or email valliantfoundation@gmail.com** for assistance. 🚀

## The Significance of a Data Extraction Form and How to Troubleshoot Issues When Filling One Out

A **data extraction form** is a **critical tool** in systematic reviews and meta-analyses. It ensures that **consistent, accurate, and relevant** information is collected from each study. This form allows research assistants to systematically **record study characteristics, population details, mental health assessments, diabetes outcomes, and statistical findings**, all of which are crucial for synthesizing data across multiple studies.

However, **issues can arise** when filling out the form, and troubleshooting these problems effectively is key to maintaining data integrity. Below are **common challenges and solutions** when working with data extraction:

1. **Unclear Study Design**
    - **Issue:** Some papers do not explicitly state whether they are **cohort, case-control, or qualitative studies**.
    - **Solution:** Look at **how participants were selected and followed**—if subjects were **observed over time**, it is likely a **cohort study**. If researchers **compared individuals with and without an outcome retrospectively**, it is likely a **case-control study**.
2. **Missing Data**
    - **Issue:** Not all studies report every variable in your extraction form.
    - **Solution:** If a study does not report a specific variable (e.g., **HbA1c levels, hospitalization rates, ORs, p-values**), **note it as "NR" (Not Reported)** instead of leaving it blank. If critical information is missing, **check supplemental materials or contact the study authors**.
3. **Confusing Statistical Reporting**
    - **Issue:** Studies may use **different statistical models** or **unfamiliar effect size measures** (e.g., reporting hazard ratios instead of odds ratios).
    - **Solution:** If numbers **do not match standard reporting**, highlight them for a **statistician or senior researcher** before extracting data incorrectly. Always **copy and paste** statistical values directly from the study to avoid misinterpretation.
4. **Multiple Study Groups**

- **Issue:** Some studies compare more than just two groups (e.g., **homeless with vs. without mental health conditions AND housed with vs. without mental health conditions**).
- **Solution: Extract data for each relevant subgroup separately** and ensure that comparisons align with the **systematic review's research question**.

---

## How Mental Health Conditions Are Assessed and How to Note Them in the Data Extraction Form

Mental health conditions in research studies can be assessed in **several ways**, and research assistants must **carefully document how these conditions were diagnosed** when filling out the data extraction form.

**Common Methods of Mental Health Assessment in Studies:**

1. **Structured Clinical Interviews:**
   - Conducted by **psychiatrists or psychologists** using standardized diagnostic tools like the **Structured Clinical Interview for DSM-5 (SCID)**.
   - **Example in Data Extraction:** Diagnosis confirmed via SCID (DSM-5 criteria).
2. **Medical Record Diagnosis:**
   - Some studies use **hospital or clinic records** to confirm psychiatric diagnoses.
   - **Example in Data Extraction:** Mental health conditions identified via **electronic medical records (EMRs)**.
3. **Self-Reported Symptoms (Survey-Based)**
   - Participants complete **validated screening tools** like the **PHQ-9 (for depression) or GAD-7 (for anxiety)**.
   - **Example in Data Extraction:** Depression assessed via **PHQ-9 ≥ 10 (moderate-to-severe depression)**.
4. **Self-Reported History (Unverified)**
   - Some studies rely solely on **participant self-report**, which can be **less reliable**.
   - **Example in Data Extraction:** Mental health conditions **self-reported with no formal diagnosis**.

📌 **Troubleshooting Mental Health Assessment Issues:**

- **If a study does not clearly define how mental health conditions were diagnosed, note "NR" (Not Reported).**
- **If a study groups all psychiatric disorders together ("any mental health condition"), clarify this in the extraction form.**
- **If different psychiatric disorders have separate data (e.g., depression, schizophrenia), list them individually.**

---

## How to Extract and Record Study Outcomes

Study outcomes describe **what the researchers measured** to determine the impact of homelessness and mental health conditions on diabetes management. **Research assistants must extract all relevant outcomes accurately** for a systematic review or meta-analysis.

📌 **Common Outcomes in Diabetes Studies:**

1. **Glycemic Control (HbA1c Levels)**
    - Reported as **mean ± SD** or as **% achieving target HbA1c (<7%)**.
    - Example: **Mean HbA1c = 9.2% (SD = 1.4) in homeless vs. 7.8% (SD = 1.1) in housed**.
2. **Hospitalization Rates for Diabetes-Related Complications**
    - Often presented as **odds ratios (OR) or relative risks (RR)**.
    - Example: **Homeless individuals had OR = 3.4 (95% CI: 2.1 – 5.2, p < 0.001) for hospitalization**.
3. **Diabetic Ketoacidosis (DKA) Incidence**
    - Reported as **% of participants hospitalized for DKA within the study period**.
    - Example: **22% of homeless vs. 8% of housed individuals experienced DKA (p < 0.01)**.
4. **Adherence to Insulin Therapy**
    - Measured by **self-reported missed doses or prescription refill rates**.
    - Example: **Homeless individuals missed 3.2 insulin doses/week vs. 1.1 doses/week in housed individuals**.

📌 **Troubleshooting Outcome Data Issues:**

- If an outcome **is not reported, write "NR" instead of assuming it was not measured**.
- If a study provides **raw data instead of summarized statistics**, flag it for a **statistician** to calculate effect sizes.
- Always **copy and paste statistical values directly from the study** to avoid data entry errors.

---

## What Are Systematic Reviews and Meta-Analyses, and Why Are They Important?

A **systematic review** is a **comprehensive summary of all relevant studies** on a specific research question. It follows a structured methodology, including **rigorous data extraction and quality assessment**, to minimize bias.

A **meta-analysis** is a statistical technique that **combines data from multiple studies** to produce a more precise estimate of an effect (e.g., the impact of homelessness on HbA1c levels).

## Why Are They Important?

✅ **More Reliable Evidence** → Systematic reviews reduce bias and provide stronger conclusions than individual studies.
✅ **Stronger Statistical Power** → Meta-analyses increase sample size by combining studies, making findings more generalizable.
✅ **Influences Policy & Clinical Guidelines** → These reviews guide **healthcare policies, treatment recommendations, and public health interventions**.

---

## Why Being a Research Assistant on a Meta-Analysis Is Valuable for Future Careers

If you are considering **graduate school, medical school, or a research career**, working as a research assistant on a meta-analysis is **highly valuable** for several reasons:

### 📌 1. Gain Critical Research Skills

- You will **learn how to assess study quality**, extract data, and understand **statistical analyses**—essential skills for research careers.

### 📌 2. Strengthen Your Graduate School or Medical School Application

- Meta-analysis work **demonstrates strong analytical abilities, attention to detail, and research experience**, all of which **graduate programs value highly**.

### 📌 3. Opportunity for Publication

- Many **systematic reviews lead to peer-reviewed journal publications**, which **strengthen your CV** and improve your chances of securing **research fellowships, grants, or admissions to top programs**.

### 📌 4. Develop Statistical and Analytical Expertise

- Understanding **effect sizes (OR, RR, Cohen's d), confidence intervals, and heterogeneity ($I^2$ in meta-analyses)**makes you stand out among research applicants.

### 📌 5. Build Professional Connections

- You will work with **faculty members, principal investigators, and statisticians**, providing networking opportunities for **future research positions or graduate school recommendations**.

# Statistical Analysis Definitions

**Cohen's d (Standardized Mean Difference - SMD)**

- Used for **continuous variables** (e.g., HbA1c levels, blood pressure).
- Measures the difference in means between two groups (e.g., homeless vs. stably housed) in standard deviation units.
- **Interpretation**:
    - d=0.2d=0.2 → Small effect
    - d=0.5d=0.5 → Medium effect
    - d=0.8d=0.8 → Large effect
- Example: If the mean HbA1c in homeless individuals is 8.5% and in stably housed individuals is 7.2%, with a pooled standard deviation of 1.5, then:d=(8.5−7.2)1.5=0.87d=1.5(8.5−7.2)=0.87 This suggests a **large effect**, meaning housing status significantly impacts HbA1c levels.

**Odds Ratio (OR)**

- Used for **binary (categorical) outcomes** (e.g., adherence to insulin therapy: Yes/No, hospitalization: Yes/No).
- Compares the odds of an event occurring in one group versus another.
- **Interpretation**:
    - OR=1OR=1 → No difference between groups
    - OR>1OR>1 → Higher odds of the event in the exposed group
    - OR<1OR<1 → Lower odds of the event in the exposed group
- Example: If homeless individuals have an **odds of 2.5** for hospitalization compared to housed individuals, it means they are **2.5 times more likely** to be hospitalized.

**Relative Risk (RR, also called Risk Ratio)**

- Used when comparing the probability of an event occurring in one group versus another.
- Different from OR because it compares **probabilities** rather than **odds**.
- **Interpretation**:
    - RR=1RR=1 → No difference in risk
    - RR>1RR>1 → Increased risk in the exposed group
    - RR<1RR<1 → Decreased risk in the exposed group
- Example: If the **risk of diabetic ketoacidosis (DKA) is 30% in the homeless group** and **10% in the stably housed group**, then:RR=30%10%=3.0RR=10%30%=3.0 This means homeless individuals are **3 times more likely** to experience DKA than stably housed individuals.

## Confidence Interval (CI)

A **confidence interval (CI)** is a range of values that estimates the true effect size or population parameter with a certain level of confidence, usually **95%**. It tells us how precise the estimate is and provides a range in which the true value is likely to fall.

- **Example Interpretation**: If a study finds that the mean HbA1c level difference between homeless and housed individuals is **1.2% (95% CI: 0.8% to 1.6%)**, this means we are **95% confident** that the true difference in HbA1c levels is between **0.8% and 1.6%**.
- **Key Rule**:
    - If the CI **does not include 0** (for mean differences) or **does not include 1** (for odds ratios or risk ratios), the result is considered **statistically significant**.
    - **Wider CI** → Less precise estimate (more variability in the data).
    - **Narrower CI** → More precise estimate (less variability in the data).

## p-Value

A **p-value** measures how likely the observed result is due to **random chance** rather than a real effect. It helps determine **statistical significance**.

- **Threshold for Significance**: A result is typically considered **statistically significant if p < 0.05**, meaning there is less than a **5% probability** that the observed effect occurred by chance.
- **Example Interpretation**:
    - **p = 0.03** → The result is statistically significant (less than 3% probability the effect is due to chance).
    - **p = 0.20** → The result is **not** statistically significant (20% probability the effect is due to chance, too high to confidently say there's a real effect).

## Key Relationship Between CI & p-Value

- If a **95% CI does not include 0 (for mean differences) or 1 (for odds ratios/risk ratios), the p-value will be < 0.05**, meaning the result is statistically significant.
- If a **95% CI includes 0 or 1, the p-value will be > 0.05**, meaning the result is not statistically significant.

# Overview of how to use Quality Assessment Tools

## 1️⃣ Newcastle-Ottawa Scale (NOS) – Cohort Studies

### 🟢 Use NOS-Cohort when assessing cohort studies

**What is a Cohort Study?**

A **cohort study** follows a group of people over time to see how certain exposures (e.g., homelessness, mental health conditions) affect outcomes (e.g., diabetes control, hospitalization rates).

**How to Identify a Cohort Study:**

✅ The study **starts with a group** of people who do or do not have an exposure (e.g., homeless vs. housed individuals).
✅ It **follows them over time** to see who develops the outcome (e.g., poor HbA1c control).
✅ It looks at **causation or risk factors** over a period.

**Example of a Cohort Study:**

- Researchers **track** a group of 500 people with type 1 diabetes, half of whom are homeless and half of whom are housed. They measure their HbA1c levels every 6 months for 2 years.

📌 **Use NOS-Cohort for these studies because it evaluates:**
✔ How well participants were selected (e.g., was the exposed group representative?)
✔ If researchers followed up long enough to measure the outcomes
✔ Whether confounding factors (e.g., mental health conditions, access to healthcare) were accounted for

---

## 2️⃣ Newcastle-Ottawa Scale (NOS) – Case-Control Studies

🟡 **Use NOS-Case Control when assessing case-control studies**

**What is a Case-Control Study?**

A **case-control study** compares people **who already have the outcome** (cases) to people **who do not have the outcome**(controls), looking backward to see what exposures they had.

**How to Identify a Case-Control Study:**

✅ The study **starts with an outcome** (e.g., diabetic ketoacidosis cases vs. those who didn't have DKA).
✅ Researchers **look backward** to identify past exposures (e.g., were DKA patients more likely to have a mental health condition or be homeless?).
✅ It is **retrospective** (uses past data rather than following people over time).

**Example of a Case-Control Study:**

- Researchers review medical records of **100 patients hospitalized for DKA (cases)** and compare them to **100 type 1 diabetes patients without DKA (controls)**. They check if mental health conditions were more common in the DKA group.

📌 **Use NOS-Case Control for these studies because it evaluates:**
✔ How well cases and controls were selected
✔ Whether exposures (e.g., mental health conditions) were measured the same way in both groups
✔ If researchers controlled for important confounders (e.g., age, gender, healthcare access)

---

## 3️⃣ CASP Checklist – Qualitative Studies

🔵 **Use CASP Checklist when assessing qualitative studies**

**What is a Qualitative Study?**

A **qualitative study** explores people's **experiences, perceptions, and barriers** rather than using numerical data.

**How to Identify a Qualitative Study:**

✅ The study **focuses on personal experiences, interviews, or focus groups** (e.g., barriers homeless individuals face in managing diabetes).
✅ The results are **descriptive** rather than statistical (e.g., themes, quotes).
✅ It often involves **open-ended questions** rather than numerical comparisons.

**Example of a Qualitative Study:**

- Researchers **interview 50 homeless individuals with type 1 diabetes** about the challenges they face in taking insulin, analyzing themes like affordability, stigma, and lack of refrigeration.

📌 **Use the CASP Checklist for these studies because it evaluates:**
✔ Whether the study design and methodology are appropriate for qualitative research
✔ If researchers minimized bias in data collection and interpretation
✔ How well the study's findings are supported by the data

---

## Quick Summary: Which Tool to Use?

| Study Type | Example | Which Tool? |
|---|---|---|

| | | |
|---|---|---|
| **Cohort Study** (Long-term follow-up of groups with/without exposure) | Following homeless and housed individuals over 2 years to track HbA1c changes | **NOS-Cohort** |
| **Case-Control Study** (Comparing people with vs. without an outcome) | Comparing past records of DKA patients vs. non-DKA patients to assess mental health exposure | **NOS-Case Control** |
| **Qualitative Study** (Interviews, focus groups, experiences) | Interviewing homeless individuals on barriers to diabetes care | **CASP Checklist** |

---

## Final Notes for Research Assistants:

✔ Always **identify the study design first** before selecting the quality assessment tool.
✔ If a study follows participants **over time**, use **NOS-Cohort**.
✔ If a study **looks backward** to compare people with vs. without an outcome, use **NOS-Case Control**.
✔ If a study **relies on interviews or personal experiences**, use the **CASP Checklist**.

Would you like me to create a **checklist or spreadsheet template** to help your team apply these tools easily?

## How to Use the Newcastle-Ottawa Quality Assessment Scale (NOS) for Case-Control and Cohort Studies

The **Newcastle-Ottawa Scale (NOS)** is a tool used to assess the quality and risk of bias in **observational studies**. It evaluates three main domains:

1. **Selection** – How well cases/controls (or cohorts) are selected.
2. **Comparability** – How well cases and controls (or cohorts) are matched for confounding variables.
3. **Exposure (for case-control) or Outcome (for cohort studies)** – How well outcomes are measured.

Each category has **specific criteria**, and studies earn **stars (⭐)** based on how well they meet these criteria. A maximum of **9 stars** can be awarded.

---

# Step-by-Step Guide for Case-Control Studies

## Step 1: Selection (Up to 4 stars)

1. **Is the case definition adequate?**
    - ⭐ If cases are defined **with independent validation** (e.g., diagnosed by a physician using standardized criteria).
    - No star if the case definition is unclear.
2. **Representativeness of the cases**
    - ⭐ If cases are **consecutive or clearly representative** of the population.
    - No star if the selection method is not stated or is potentially biased.
3. **Selection of Controls**
    - ⭐ If controls are **drawn from the general community** rather than a hospital (to avoid selection bias).
    - No star if controls are from hospitals or their selection is not described.
4. **Definition of Controls**
    - ⭐ If controls **do not have the disease being studied** (e.g., individuals without diabetes in a type 1 diabetes study).
    - No star if the source of controls is not described.

---

## Step 2: Comparability (Up to 2 stars)

1. **Comparability of cases and controls based on study design or analysis**
    - ⭐ If cases and controls are matched on an important confounder (e.g., **age, sex, or socioeconomic status**).
    - ⭐ Additional star if the study controls for **an additional confounder** (e.g., mental health status, access to healthcare).
    - No stars if no confounding factors are controlled.

---

## Step 3: Exposure (Up to 3 stars)

1. **Ascertainment of exposure**
    - ⭐ If exposure is **verified using medical records or structured interviews with blinding**.
    - No star if exposure is **self-reported without validation**.
2. **Same method of ascertainment for cases and controls**
    - ⭐ If cases and controls are assessed using the **same method** (e.g., both groups undergo the same interview or medical review).

- No star if different methods are used.

3. **Non-response rate**
   - ⭐ If response rates are **the same for both cases and controls**.
   - No star if response rates are different and not explained.

---

### How to Score Case-Control Studies

- **7-9 stars → High-quality study (low risk of bias)**
- **4-6 stars → Moderate quality (some risk of bias)**
- **0-3 stars → Low quality (high risk of bias, questionable reliability)**

---

# Step-by-Step Guide for Cohort Studies

## Step 1: Selection (Up to 4 stars)

1. **Representativeness of the exposed cohort**
   - ⭐ If the cohort **represents the general population** (e.g., randomly selected homeless individuals with type 1 diabetes).
   - No star if the cohort is a **specific selected group** (e.g., only hospital patients).
2. **Selection of the non-exposed cohort**
   - ⭐ If the **control group** (e.g., housed individuals) is selected from the **same community** as the exposed cohort.
   - No star if controls come from a different source.
3. **Ascertainment of exposure**
   - ⭐ If exposure is verified using **medical records or structured interviews**.
   - No star if exposure is based on **self-reports only**.
4. **Demonstration that outcome was not present at the start of the study**
   - ⭐ If researchers confirm that the outcome (e.g., poor glycemic control) **did not exist at baseline**.
   - No star if this is not explicitly stated.

---

## Step 2: Comparability (Up to 2 stars)

1. **Comparability of cohorts based on study design or analysis**
   - ⭐ If the study controls for **the most important confounder** (e.g., age or access to healthcare).
   - ⭐ Additional star if it controls for **a second confounder** (e.g., mental health status).

- No stars if confounders are not controlled.

---

## Step 3: Outcome (Up to 3 stars)

1. **Assessment of outcome**
   - ⭐ If outcomes (e.g., HbA1c levels, hospitalization rates) are measured using **independent assessment, medical records, or validated instruments**.
   - No star if self-reported without validation.
2. **Was follow-up long enough for the outcome to occur?**
   - ⭐ If follow-up **is sufficient** for meaningful outcomes to develop (e.g., at least **6-12 months for diabetes control**).
   - No star if follow-up is too short.
3. **Adequacy of follow-up**
   - ⭐ If **80% or more participants are followed up**, or if missing data is explained properly.
   - No star if there is **high loss to follow-up (>20%)** without explanation.

---

## How to Score Cohort Studies

- **7-9 stars → High-quality study (low risk of bias)**
- **4-6 stars → Moderate quality (some risk of bias)**
- **0-3 stars → Low quality (high risk of bias, questionable reliability)**

---

## Example of NOS Scoring for a Cohort Study on Homelessness and Type 1 Diabetes

Let's say a study follows **homeless and housed individuals with type 1 diabetes** for 12 months, measuring their **HbA1c levels and hospitalization rates**.

| Criteria | Stars (⭐) | Reasoning |
|---|---|---|
| **Selection** | ⭐⭐⭐⭐ **(4/4)** | The cohort is representative, controls are from the same population, exposure is validated, and baseline outcome is assessed. |
| **Comparability** | ⭐⭐ **(2/2)** | The study adjusts for age, gender, and mental health comorbidities. |

| | | |
|---|---|---|
| **Outcome** | ⭐⭐⭐ **(3/3)** | Outcomes are validated, follow-up is 12 months (sufficient), and 90% of participants complete the study. |
| **Total Score** | **9/9** | **High-quality study** |

---

### How to Apply NOS in Your Systematic Review

1. Use an **NOS checklist table** for each study.
2. Studies with **low NOS scores (<4 stars)** should be considered **high risk of bias** and may be excluded or analyzed separately.
3. Report the NOS scores **in the manuscript** (e.g., in a supplementary table).

### How to Use the CASP Checklist for Qualitative Studies

The **Critical Appraisal Skills Programme (CASP) Checklist** is used to assess the quality and rigor of **qualitative studies** (e.g., studies using interviews, focus groups, or thematic analysis). It helps determine whether a study's findings are trustworthy and well-conducted.

---

## Step 1: Understand When to Use CASP

Use the **CASP Checklist** if the study is:
✅ **Qualitative** (based on interviews, focus groups, or observations)
✅ **Exploring experiences, perceptions, or barriers** (rather than numerical outcomes)
✅ **Using thematic analysis, grounded theory, or phenomenology**

📌 **Example:** A study interviewing **homeless individuals with type 1 diabetes** about their challenges in accessing insulin would be assessed using the CASP Checklist.

---

## Step 2: Answer the 10 CASP Checklist Questions

Each study is evaluated based on **10 key questions**, grouped into three main categories:

---

### A. Validity (Are the Results Credible?)

1️⃣ **Was there a clear statement of the research aims?**
✅ Check if the study clearly explains **why** it was conducted and **what** it aims to understand (e.g., barriers to diabetes management in homeless individuals).

2️⃣ **Is a qualitative methodology appropriate?**
✅ Qualitative methods should be used if the study aims to explore experiences rather than measure numerical data.
❌ If the research question would be better answered with a survey or experiment, this could indicate poor methodology.

3️⃣ **Was the research design appropriate to address the aims?**
✅ Look for **justification** of why the researchers chose interviews, focus groups, or observations.
❌ If the study doesn't explain **why** a particular method was used, it might lack rigor.

4️⃣ **Was the recruitment strategy appropriate?**
✅ The study should **clearly describe** how participants were selected (e.g., snowball sampling, purposive sampling).
❌ If the recruitment process is unclear or biased, the findings may not be trustworthy.

5️⃣ **Was the data collection method appropriate?**
✅ Check if the study **explains how data were collected** (e.g., structured interviews, recorded observations).
✅ Look for details about **whether the questions were pilot-tested** or developed based on theory.

---

## B. Trustworthiness (Was the Study Conducted Rigorously?)

6️⃣ **Was the relationship between researcher and participants considered?**
✅ Look for a discussion of **reflexivity** (i.e., how the researcher's background or biases might influence results).
❌ If the researcher's role isn't acknowledged, the study might introduce unintended bias.

7️⃣ **Was ethical approval obtained?**
✅ Ethical approval should be mentioned, and **participant consent** should be described.
❌ If there is **no mention of ethics**, the study may not meet research standards.

8️⃣ **Was data analysis sufficiently rigorous?**
✅ Look for **clear explanations** of how themes were identified in the data.
✅ Studies should describe if they used software (e.g., NVivo) or manual coding for thematic analysis.

---

### C. Contribution to Knowledge (Are the Findings Useful?)

9️⃣ **Are the findings clearly stated?**
✅ The results should include **direct quotes** from participants to support themes.
❌ If findings are vague or overly summarized, the study may not be well-reported.

🔟 **How valuable are the findings?**
✅ Look for a **discussion of implications**, including **how the findings can be used in practice** or policy-making.
❌ If the study does not explain how its results **contribute to knowledge**, it may be less useful.

---

## Step 3: Assign a Quality Rating

After answering all 10 questions, **rate the study** as:

- ✅ **High-quality**: Meets all or most CASP criteria, findings are credible and well-supported.
- ⚠ **Moderate-quality**: Some methodological concerns, but findings are still useful.
- ❌ **Low-quality**: Significant issues with methodology, bias, or unclear reporting.

---

## Example CASP Checklist Scoring for a Qualitative Study

| CASP Question | Assessment | Notes |
|---|---|---|
| 1. Clear research aim? | ✅ Yes | The study clearly explains its purpose. |
| 2. Qualitative method appropriate? | ✅ Yes | Uses interviews to explore personal experiences. |
| 3. Research design appropriate? | ⚠ Some concerns | No justification for why interviews were chosen. |

| | | |
|---|---|---|
| 4. Recruitment strategy? | ❌ No | Does not explain how participants were selected. |
| 5. Data collection method? | ✅ Yes | Semi-structured interviews were conducted. |
| 6. Researcher-participant relationship? | ⚠ Some concerns | No discussion of researcher bias. |
| 7. Ethical approval? | ✅ Yes | Ethics board approval and informed consent obtained. |
| 8. Data analysis rigorous? | ✅ Yes | Thematic analysis with coding software used. |
| 9. Findings clearly stated? | ✅ Yes | Themes are supported by participant quotes. |
| 10. Findings valuable? | ✅ Yes | Results have policy implications. |

**Final Rating**: **Moderate-High Quality**

---

## How to Use the CASP Checklist in Your Systematic Review

1️⃣ **For each qualitative study**, go through the **10 CASP questions** and determine if the study meets each criterion.
2️⃣ **Summarize your ratings in a table** (like the one above) to compare study quality.
3️⃣ **If a study has multiple weak areas (e.g., unclear methods, no ethics approval, unclear findings), consider excluding it** or noting it as a **low-quality source**.
4️⃣ **Report the CASP scores** in your manuscript, either in a summary table or appendix.

---

### Final Notes for Research Assistants

✔ Use the CASP Checklist for qualitative studies ONLY.
✔ Answer each of the 10 questions carefully based on the study's methods.
✔ Summarize findings in a quality assessment table.
✔ If a study has too many "unclear" or "no" answers, it might be unreliable.

### General Instructions for Extracting Data

- Carefully read through the full-text study, including abstract, methods, results, and tables.
- If multiple reviewers are extracting data for the same study, compare findings and resolve discrepancies.
- If information is missing or unclear, note "Not Reported (NR)" instead of leaving it blank.
- Ensure numerical data (e.g., prevalence rates, effect sizes) are extracted accurately.

---

# Step-by-Step Guide for Each Data Field

## 1️⃣ URLs

📍 Where to find it:

- The DOI link or journal webpage (often in the abstract or citation).
- Copy the URL where the study was accessed.

---

## 2️⃣ RA Signature

📍 Where to find it:

- This is your own signature confirming that you extracted data from the study.

---

## 3️⃣ Author, Year

📍 Where to find it:

- **At the top of the study, near the title.**

---

## 4️⃣ Country

📍 **Where to find it:**

- **In the Methods section under "Study Setting" or in the Title/Abstract if the location is mentioned.**

---

## 5️⃣ Study Design

📍 **Where to find it:**

- **Found in the Methods section.**
- **Common types: Cohort Study, Case-Control Study, Qualitative Study, Randomized Controlled Trial (RCT).**

---

## 6️⃣ Sample Size

📍 **Where to find it:**

- **Usually in the Methods or Results section.**
- **Look for “n = ____” to find the number of participants.**

---

## 7️⃣-🔟 Population Categories

***(Check Yes or No for each category)***

- **Unhoused with mental health conditions**
- **Unhoused without mental health conditions**
- **Housed with mental health conditions**
- **Housed without mental health conditions**

📍 **Where to find it:**

- **Look for subgroup analysis or Table 1 (Baseline Characteristics).**
- **If a study does not separate groups this way, mark "No".**

---

## 1️⃣1️⃣ Study's Definition of Homelessness

📍 **Where to find it:**

- **Usually in the Methods section.**
- **Copy and paste how the study defines homelessness (e.g., "living on the streets, in shelters, or temporary housing").**

---

## 1️⃣2️⃣ List of Mental Health Conditions

📍 **Where to find it:**

- **In the Introduction or Methods section.**
- **The study should specify whether it examined depression, PTSD, anxiety, schizophrenia, substance use disorder, etc.**

---

## 1️⃣3️⃣ Diabetes Type

📍 **Where to find it:**

- **In the Inclusion Criteria (Methods) section.**
- **Ensure the study focuses on Type 1 Diabetes (Exclude if it only includes Type 2).**

---

## 1️⃣4️⃣ % Prevalence of Mental Health Conditions in Study Population

📍 **Where to find it:**

- **In the Results section, usually under a demographics table.**
- **If multiple conditions are reported separately, list each with its percentage.**

---

## 1️⃣5️⃣ HbA1c Outcomes

📍 **Where to find it:**

- **Found in the Results section, typically in a table.**
- **Look for mean HbA1c (%) before and after intervention or between groups.**

---

## 1️⃣6️⃣ Hospitalization Rates

📍 **Where to find it:**

- **Usually reported in the Results section under outcomes.**
- **May be listed as % hospitalized within a specific timeframe (e.g., 6 months, 1 year).**

---

## 1️⃣7️⃣ DKA (Diabetic Ketoacidosis) Rates

📍 **Where to find it:**

- **Check the Results section, especially for clinical outcomes.**
- **Look for "DKA events per group" or DKA admissions per 100 patients.**

---

## 1️⃣8️⃣ How Mental Health Conditions Were Assessed

📍 **Where to find it:**

- **Found in the Methods section.**
- **Could be based on:**
  - **Clinical Diagnosis (e.g., psychiatrist-diagnosed PTSD)**
  - **Self-Report (e.g., patient surveys on depression symptoms)**
  - **Screening Tool (e.g., PHQ-9 for depression, GAD-7 for anxiety)**

---

## 1️⃣9️⃣ How Diabetes Outcomes Were Measured

📍 **Where to find it:**

- **Found in the Methods section under "Outcome Measures."**
- **Could include:**
  - **HbA1c tests (lab-confirmed)**
  - **Electronic Health Records (EHR)**
  - **Self-reported diabetes management**

---

## 2️⃣0️⃣ Main Outcome of the Study

📍 **Where to find it:**

- **The primary result or conclusion in the Results or Discussion section.**

---

## 2️⃣1️⃣ Effect Sizes (Cohen's d, OR, RR)

📍 **Where to find it:**

- **In the Results section (often in a table).**
- **Cohen's d (for continuous outcomes like HbA1c).**
- **Odds Ratio (OR) or Relative Risk (RR) (for binary outcomes like hospitalization rates).**
- **If not reported, mark NR.**

---

## 2️⃣2️⃣ Confidence Intervals

📍 **Where to find it:**

- **Reported as 95% CI (Lower Bound, Upper Bound) in the Results section or tables.**
- **Example: HbA1c difference = 1.2% (95% CI: 0.8, 1.6).**

---

## 2️⃣3️⃣ p-values

📍 **Where to find it:**

- **Results section or tables under statistical analysis.**
- **If $p < 0.05$, the result is statistically significant.**
- **If not reported, mark "NR".**

---

## 2️⃣4️⃣ Study Design Methodology

📍 **Where to find it:**

- **Copy and paste from the Methods section.**

---

## 2️⃣5️⃣ Inclusion and Exclusion Criteria

📍 **Where to find it:**

- **Usually in the Methods section under "Eligibility Criteria."**
- **Copy and paste exact wording from the study.**

---

## 2️⃣6️⃣ Demographics of Population

📍 **Where to find it:**

- **Found in Table 1 (Baseline Characteristics).**
- **Includes age, gender, race/ethnicity, socioeconomic status.**

---

## 2️⃣7️⃣ Risk of Bias and Tool Used

📍 **Where to find it:**

- **Assess bias using the correct tool:**
  - **Cohort studies → NOS-Cohort**
  - **Case-control studies → NOS-Case Control**
  - **Qualitative studies → CASP Checklist**
  - **RCTs → Cochrane Risk of Bias Tool**
- **Rate studies as Low, Moderate, or High Risk of Bias.**

---

## 2️⃣8️⃣ Co-Morbidities

📍 **Where to find it:**

- **Found in Table 1 (Baseline Characteristics).**
- **Look for hypertension, cardiovascular disease, substance use disorder, etc.**

---

# Final Steps for Research Assistants

✅ **Double-check all extracted data for accuracy.**
✅ **Resolve discrepancies with a second reviewer.**
✅ **Ensure all numerical data is correctly recorded.**
✅ **If something is missing, write "NR" (Not Reported).**

**Be absolutely sure to copy paste ALL statistical data that you find. It does NOT help us to simply paste in OR = 2.5 if we do not have any context. You must copy and paste the entire data set into the document so that we know where it came from and what it is referring to.**

### 📖 Guide for Research Assistants: Extracting Statistical Data from Papers

**(💡 Your Job: Identify, copy, and paste key statistical numbers from studies into the data extraction form.)**

**📌 Remember:**

- **Always copy and paste numbers exactly as they appear in the paper.**
- **Never leave blanks—if something is missing, write "NR" (Not Reported).**
- **You do NOT need to calculate anything—just find and record the numbers.**

---

# 🟢 Step 1: Effect Sizes (How Big is the Difference?)

**Effect sizes tell us how much one variable (like homelessness) influences another (like HbA1c levels).**

**You might see:**

- **Cohen's d (For differences in continuous numbers like HbA1c)**
- **Odds Ratio (OR) (For yes/no outcomes like hospitalization)**
- **Relative Risk (RR) (For comparing risks of a condition)**

**📍 Where to find it?**

- **Look in the Results section or Tables labeled "Key Findings" or "Statistical Analysis".**

## Example 1: Cohen's d (For Differences in Averages)

**📜 How it appears in a paper:**
***"The mean HbA1c level in homeless individuals was significantly higher than in housed individuals (Cohen's d = 0.85, p < 0.01)."***

**📝 What to copy-paste into the form:**

- **Cohen's d: 0.85**
- **This means: A large difference in HbA1c between the two groups.**

---

### Example 2: Odds Ratio (OR) (For Yes/No Outcomes Like Hospitalization)

📜 **How it appears in a paper:**
***"Homeless individuals were more likely to be hospitalized than housed individuals (OR = 2.5, 95% CI: 1.8 – 3.4, p < 0.01)."***

📝 **What to copy-paste into the form:**

- **Odds Ratio (OR): 2.5**
- **This means: Homeless individuals are 2.5 times more likely to be hospitalized than housed individuals.**

---

### Example 3: Relative Risk (RR) (For Comparing Risks of a Condition)

📜 **How it appears in a paper:**
***"The risk of diabetic ketoacidosis (DKA) was 3.2 times higher in homeless individuals (RR = 3.2, 95% CI: 2.1 – 4.9, p < 0.001)."***

📝 **What to copy-paste into the form:**

- **Relative Risk (RR): 3.2**
- **This means: Homeless individuals are 3.2 times more likely to develop DKA than housed individuals.**

---

## 🔵 Step 2: Confidence Intervals (How Certain Are the Results?)

**A Confidence Interval (CI) gives a range where the true effect is likely to be.**

📍 **Where to find it?**

- **Next to effect sizes (OR, RR, or mean differences) in the Results section or Tables.**

### Example 4: Confidence Interval for OR

📜 **How it appears in a paper:**
***"Patients with mental health conditions had OR = 2.5 (95% CI: 1.8 – 3.4, p < 0.01)."***

📝 **What to copy-paste into the form:**

- **Confidence Interval (CI): 1.8 – 3.4**
- **This means: The real value is likely between 1.8 and 3.4, so the result is strong.**

🚨 **Possible confusion:**

- **If the CI includes 1, the result is not statistically significant.**
  - **Example: OR = 1.2 (95% CI: 0.9 – 1.5)**
  - **DON'T copy just the OR—copy the CI too!**

---

# 🟠 Step 3: p-values (Is This Real or Just Chance?)

**A p-value tells us if the result is statistically significant (meaning, it's unlikely to be random).**

📍 **Where to find it?**

- **In the Results section or Tables next to effect sizes.**

### Example 5: p-value for Cohen's d

📜 **How it appears in a paper:**
***"The mean HbA1c level in homeless individuals was significantly higher than in housed individuals (Cohen's d = 0.85, p < 0.01)."***

📝 **What to copy-paste into the form:**

- **p-value: p < 0.01**
- **This means: The result is statistically significant.**

🚨 **Possible confusion:**

- **If p > 0.05, the result is NOT significant!**
  - **Example: p = 0.08 (Not significant—do not interpret this as a real effect.)**
- **NEVER write p = 0.000 → Instead, copy-paste p < 0.001 if the paper does.**

---

# 🟣 Step 4: Heterogeneity (If the Study Is a Meta-Analysis)

📍 **Where to find it?**

- **In the Results section if the paper does a meta-analysis.**

📌 **Key numbers to look for:**

- **Cochran's Q test → If p < 0.05, studies are too different for a simple pooled analysis.**
- **$I^2$ statistic (percentage of variability between studies):**
  - **$I^2$ < 25% → Low heterogeneity (studies are similar)**
  - **$I^2$ = 25-50% → Moderate heterogeneity**
  - **$I^2$ > 50% → High heterogeneity (studies are very different)**

### Example 6: Heterogeneity

📜 **How it appears in a paper:**
***"There was substantial heterogeneity in the included studies ($I^2$ = 65%, p < 0.001)."***

📝 **What to copy-paste into the form:**

- **$I^2$ = 65%, p < 0.001**
- **This means: The studies are quite different, so a random-effects model was likely used.**

---

# 📌 Final Checklist for Research Assistants

✅ **Always copy and paste exact statistical results from the paper.**
✅ **Record both effect sizes AND confidence intervals.**
✅ **Make sure p-values are copied correctly.**
✅ **If the study does NOT report an effect size, write "NR" (Not Reported).**
✅ **Watch out for common errors (e.g., mistaking non-significant results for significant ones).**
✅ **If you're confused, highlight the section and ask for help.**