

# CHANGES IN PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR DURING THE COVID-19 PANDEMIC AMONG ADULTS IN ASIA: A SCOPING REVIEW

Many parts of the world, especially low to middle-income countries, have experienced a high morbidity and mortality burden of the COVID-19 pandemic.

Most countries have adopted mitigation practices and implemented forced isolation measures such as lockdowns and movement restrictions orders as essential strategies to reduce the risks associated with infection by the novel coronavirus.

## INTRODUCTION

- There is evidence that the pandemic itself and the various restrictions to limit the spread of the virus had detrimental impacts on physical activity globally. [1, 2]
- There is a significant decrease in physical activity (PA), along with increased sedentary behaviour (SB) regardless of age, health status or geographic locations, when comparing pre-COVID-19 periods with COVID-19 lockdowns and/or post-COVID periods. [3]

## OBJECTIVE

To identify available evidence related to physical activity (PA) and sedentary behaviour (SB) among adults in Asia, during the COVID-19 pandemic



## METHODOLOGY [4-7]

### Stage 1: Identifying the research question

Two research questions were identified to address the aim of the study.

1. What are the available evidence and range of outcomes related to PA and SB among adults in Asia during the COVID-19 pandemic?
2. What is known about the impacts of PA and SB on health among adults in Asia during the COVID-19 pandemic?

### Stage 2: Identifying relevant studies

- A Boolean operator, Medical Subject Heading (MeSH Terms), and relevant keywords related to PA, SB and COVID-19 were combined to carry out the search.
- Truncations and wildcards were utilised whenever possible.

### Stage 3: Study Selection

- Titles and abstracts were double screened based on inclusion criteria and eligibility.
- Full-text level reviewing was conducted by two independent researchers with conflicts resolved by a third researcher.

### Stage 4: Charting the data

- Data were extracted and entered into a data charting form using Microsoft Excel.
- The data charted included general study information (author, title, study location, study design, and participant information), changes in PA and SB, and health outcomes resulting from changes in PA and SB.

### Stage 5: Collating, summarizing and reporting the results

Findings were summarised and reported in two ways through:

1. A descriptive analysis providing information on the extent, nature and distribution of the included studies,
2. A narrative summary of the evidence base

## PROTOCOL & SEARCH STRATEGY

- Conducted in accordance with the five-stage framework by Arksey and O'Malley, Levac et al & Colquhoun et al [4-6]
- Reporting guideline: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist [7]
- Protocol registration in the Open Science Framework (OSF) [osf.io/ykpwu] & International Platform of Registered Systematic Review and Meta-analysis Protocols (INPLASY202240023)
- Search on Databases: PubMed, ScienceDirect, Scopus and EBSCOhost (Medline) from 7 Jan to 13 Jan 2022
- Eligibility criteria: studies on any form of PA and SB in Asia during the COVID-19 pandemic; adults aged 18 to 65 years old; published peer-reviewed full-text studies in English from 2020 up to 2022. Unpublished articles, non-scientific publications, reviews or meta-analyses, or non-original data articles were excluded.

## REFERENCES

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## RESULTS & DISCUSSION

- The database search yielded a total of 9078 studies, with 1499 duplicates removed.
- Additionally, 7100 irrelevant studies were excluded through title & abstract screening.
- The remaining 479 studies were reviewed for full text, resulting in another 347 studies being excluded; the reasons are outlined in Figure 1.0.
- Finally, the remaining 132 studies were included in this scoping review. Figure 1.0 represents the search and selection of the studies in the PRISMA-ScR flow chart.

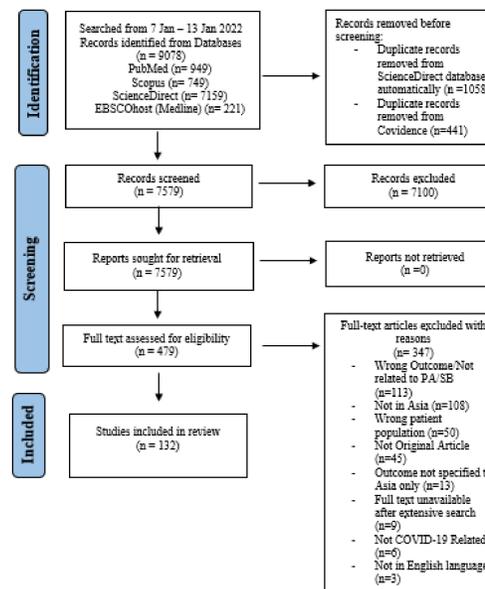
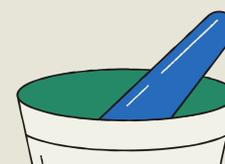


Figure 1 PRISMA-ScR flow diagram for study selection [7]

### Characteristics of Included Studies

- 122 studies examined changes in PA; while 50 studies examined changes in SB during the COVID-19 pandemic.
- 24 countries in Asia were represented; China (26.5%), Japan (12.1%), India and Saudi Arabia (7.6%) each, Turkey (6.1%), and Korea (4.5%) compose the majority.
- Most studies used a cross-sectional design (77.2%), and the data collected was through online questionnaire(s).

## CONCLUSION



- Most studies have found that physical activity among adults has decreased with a synchronous increase in sedentary behaviour during the COVID-19 pandemic.
- The decrement in PA and increment in SB was related to poor mental health, increase in body weight, and the complications of COVID-19 patients, while participants who maintained or improved their PA reported better health outcomes.

### Changes in PA and SB During the COVID-19 Pandemic among Adults in Asia; and their Impact on Health

- Of 122 studies on PA, 82 studies have found that the total PA has decreased during the COVID-19 pandemic.
- Another 7 studies reported no difference in PA levels during the COVID-19 pandemic compared to a pre-pandemic state.
- Of 50 studies on SB, an increase in SB was reported in 46 studies with measures including screen, sitting and sedentary time.
- Figures 2, 3 and 4 show the number of studies assessing the impact of PA and SB on health outcomes.

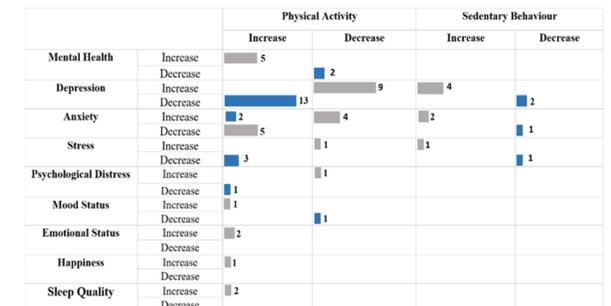
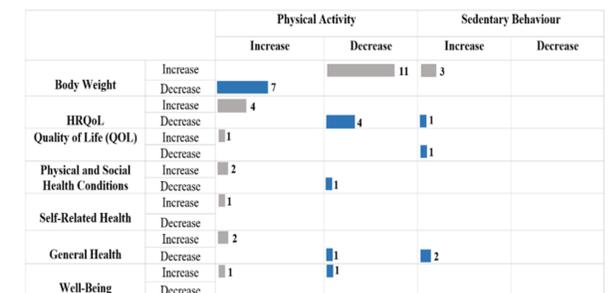


Figure 2 Number of studies assessing the impact of PA and SB on mental health, psychological distress, mood and emotional status, happiness, and sleep quality



HRQoL: Health-Related Quality of Life  
Figure 3 Number of studies assessing the impact of PA and SB on body weight, HRQoL, QoL, physical and social health conditions, SRH, general health, and well-being

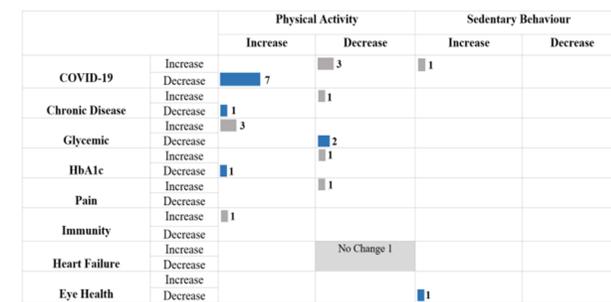


Figure 4 Number of studies assessing the impact of PA and SB on COVID-19 patients, chronic disease, glycemic, HbA1c, pain, immunity, heart failure patients, and eye health