English for scientists

I- Language and grammar for research articles

I-1- Introducing your work

Language to introduce your work is commonly used in the abstract and introduction. These words and phrases are also useful when presenting your work at conferences or discussing it with interested parties.

a- Which tense?

It is common for writers to use the present simple tense or the present perfect tense when discussing their work in an abstract. These tenses are used in affirmative sentenses

The present perfect is used to describe **An action or situation that started in the past and continues in the present.**

Present perfect tense has the auxiliary verb HAVE (or HAS) followed by a PAST PARTICIPLE.

Look at the structure for affirmative sentences in the present perfect tense. The word order is:

subject + have / has + past participle

The past participle can be **regular or irregular**.

b- Phrases for emphasising the importance of something

The importance of X is increasingly apparent…	*The importance of development in this sector is increasingly apparent.*
It is undeniable that X is of great importance…	*It is undeniable that the efficient dissemination of information is of great importance.*
We can see that X is an essential factor in…	*We can see that education is an essential factor in rates of socioeconomic growth.*

c- Discussing previous/existing work (or lack of)

There has been little focus on providing X…	*There has been little focus on providing a holistic view of the long-term effects of a change in habitat.*
Our understanding of X is incomplete.	*Our understanding of the life cycle of this sub-species is incomplete.*
Where previous studies have focussed on X, our work centres around Y.	*Where previous studies have focussed on internal factors, our work centres around external influences.*

The role of X has received far less attention than Y.	*The role of native species has received far less attention compared with invasive species.*
Extending an already published paradigm,…	*Extending an already published paradigm, we aim to identify stressors that inhibit growth.*

d- Detailing your approach

We apply a X approach to…	*We apply a creative approach to this problem.*
We discuss these results in relation to…	*We discuss these results in relation to long-term effects on native species.*
We discuss the relative importance of X in determining…	*We discuss the relative importance of air pressure in determining optimum ventilation.*
We highlight potential difficulties…	*We highlight potential difficulties in identifying the true function of these subspecies.*
Adopting a X approach, we + verb…	*Adopting a dynamic approach, we aim t*

e- Describing typical factors

X is a hallmark of Y	*A decline in mobility is a hallmark of ageing.*
X plays a key role in Y	*Parental behaviour plays a key role in levels of security.*
X is a ubiquitous feature of Y · Pronunciation: /juːˈbɪkwɪtəs/	*Sand is a ubiquitous feature of the desert.*

f- Discussing current or previous thinking

Existing theories/hypotheses on X centre on…	*Existing hypotheses on species decline centre on loss of habitat.*
One of the most widely invoked explanations/causes of X is Y.	*One of the most widely invoked causes of climate change is deforestation.*
The key intuition is that…	*The key intuition is that the plants are pollinated by insects and animals moving through the area.*
Despite its/their importance, little is known about…	*Despite its importance, little is known about the origin of this particular subspecies.*
Thus, it is often argued that…	*Thus, it is often argued that settlers and visitors inadvertently brought invasive species with them on their clothes and footwear.*

The significance of X has been debated for…	*The significance of the relationship between these two species has been debated for many years.*

g- Elaborating on your methods and findings

Expanding on a previously employed model…	*Expanding on a previously employed statistical model, we aim to provide a more detailed analysis.*
Our findings provide a framework for…	*Our findings provide a framework for further investigation.*
We provide novel/unprecedented information/data on…	*We provide novel data on migration habits of these birds.*

II- Word building

we will look at more language from academic articles and explore how certain words change according to word type. Pay attention to any changes in pronunciation in order to improve accuracy when using these words in spoken English.

II-1- Useful verbs for discussing your work

verb	**…often used with these nouns**
to establish	connection, link, benchmark, principle,
to highlight	difficulties, plight, importance, need, lack
to identify	differences, deficiencies, hazard, factors, priorities, requirements
to discuss	issue, matter, proposal, topic,
to demonstrate	importance, potential, viability, existence, presence
to combine	method, analysis, approach
to implement	measures, strategy guidelines, recommendations,

II-2- Commonly used adverbs

1. theoretically (meaning: when something could happen, be true or exist)

- Pronunciation: In both the adverb and adjective forms of this word, the stress is on the second syllable /θɪəˈretɪkli/. However, in the noun and verb forms, the word stress is on the first syllable.

Noun forms

(a) theory

· This noun can be both countable and uncountable as it can refer to a specific idea or ideas OR a set of ideas/principles that form the basis for a particular subject

e.g.(countable) *Her theories were tested on a small group of participants.*

(uncountable) *While at university I studied literary theory.*

· This noun is often used with these verbs:

propose, outline, construct, develop, formulate, apply, test, contradict, disprove, refute

a theorist (meaning: a person who develops/studies theories)

a theorem (meaning: a statement or rule that can be proven to be correct/true – especially in mathematics)

Other forms

Verb form:

to theorise/theorize

Adjective form:

theoretical (meaning: when something is based on theory rather than experience)

· This adjective often collocates with these adverbs: largely, mostly, primarily, entirely, purely, strictly

E.g. The team conducts investigations that are largely theoretical in nature.

2. commonly (meaning: usually OR by most people)

*E.g. The most commonly-used extraction method involves the use of chemical agents.*OR

Elvis Presley is commonly known as the 'the King.'

Adjective form

common

This adjective has multiple meanings:

1. when something happens frequently or exists in many places

E.g. Smith is a common English surname.

2. when something is shared by multiple people

E.g. The institutions have a common interest in the development of local resources.

3. when something is ordinary/not special

E.g. The artefacts appear to have belonged to a common footsoldier.

4. when a plant/animal is not rare and can be found in large numbers

E.g. We captured several samples from the common garden frog.

5. (British English, negative/rude) when someone is from a low social class

E.g. They thought he was quite common and made no effort to include him in their conversation.

Other forms

Noun form:

(!) unrelated in meaning to other forms)

a common (meaning: an open piece of land in a town/village that can be used by anyone)

E.g. I often go for a run on the common.

Phrase:

to be commonly held (that)

(meaning: believed

3- Accurately

4- effectively

5- Generally

6- Particularly ….

II-3- Commonly used adjectives

3. fundamental (meaning: something that forms the basic nature of something OR something that is an important part of something)

- This adjective is often used with these nouns: flaw, problem, change, difference, right, issue, principle, question

E.g. It will be necessary to make fundamental changes to way in which data is gathered. OR

One of the fundamental issues with previous studies has been a lack of access to uncontaminated samples.

Adverb form	**Noun form**
fundamentally	fundamentals (usually plural)
E.g. AI will fundamentally change the way in which we conduct our research.	*E.g. The first year of study covers the fundamentals of microbiology.*

4. empirical (meaning: based on experience rather than theories)

E.g. It is my aim to conduct an empirical study to support my claims.

Adverb form	**Noun forms**
empirically	empiricist (meaning: a person who bases their ideas on experience)
E.g. In order to test these ideas empirically, it was necessary to conduct a series of tests in controlled conditions.	empiricism (meaning: the belief that ideas should come from experience and experiments)

5. proportional (meaning: when something is suitable in amount or size in relation to another factor)

E.g. Commission is proportional to sales figures.

Adverb form	**Noun forms**
proportionately OR proportionally *E.g. Wages have not risen proportionately/proportionally to the cost of living.*	proportion (meaning: a part of a whole) Watch out for agreements with this noun: 'proportion' + a singular/uncountable noun → singular verb agreement *E.g. A significant proportion of our time was spent gathering data.* 'the proportion of' + plural countable noun/singular noun representing a group → singular verb agreement

E.g. The proportion of patients displaying long-term symptoms remains low.

'a proportion of' + plural noun → plural verb agreement

E.g. A large proportion of nurses have chosen to go on strike.

WRITING AN INTRODUCTION : DISCUSSING PREVIOUS/EXISTING WORK

I- Which tense?

It is common for writers to use the present simple tense or the present perfect tense when discussing their work in an abstract or introduction. Past tenses are also extensively used to describe previous findings.

II- Choose the right tense for each sentence

II-1- Present, present continuous

1. **I know / am knowing** you must be very busy but…

2. **I look / am looking** forward to hearing from you in the near future.

3. **I expect / am expecting** a Professor Mokrani at 7.00. Could you call me when he arrives?

4. **I thank / am thanking** you in advance for your cooperation.

5. So basically **I ask / am asking** you two things. First,… And second…

II- 2- Present simple, present continuous, present perfect, present perfect continuous

1. In the last few years there **is / has been** considerable interest in…

2. Although many different approaches **have been proposed / have been proposing**, to date **there is not / has not been** an adequate analytical model to solve this issue.

3. For more than a decade analysts **are developing / have been developing** new ways to improve learning strategies.

4. In the literature there **are / have been** several examples of new strategies to perform these tests, which all **entail / have entailed** setting new parameters [Peters 1997, Grace 2004, Gatto 2005].

5. Since 2012 there **are / have been** many attempts to establish an index [Mithran 2012, Smithson 2014], but until now no one **has managed / has been managing** to solve the issue of…

6. **We believe / are believing** that this is the first time that the problem **is / has been** addressed.

7. Nassim **has called / has been calling** six times this morning, so you'd better ring him.

8. **I have tried / have been trying** to ring you all morning, where are you? I just wanted to tell you that I **have started / have been starting** working on the new project. In fact, **we have worked / have been working** on it for three months and we have already **achieved / have already been achieving** some great results.

Exceptions : We do not normally use the continuous **with stative verbs**. Stative verbs include

- verbs of **thinking and feeling**:

believe	*love*	*recognise*	*understand*
dislike	*hate*	*remember*	*want*
know	*prefer*	*suppose*	*wish*
like	*realise*	*think* (= believe)	

- verbs of the senses:

appear	*look*	*smell*	*taste*
feel	*seem*	*sound*	

- others:

agree	*belong*	*need*	*own*
be	*disagree*	*owe*	*possess*

III- Language use : highlight phrases that emphasise the importance of the study, the scientific approach and current or previous thinking

Abstract

The earliest hominin archaeological sites preserve a record of stone tools used for cutting and pounding. Traditionally, sharp-edged flakes were seen as the primary means by which our earliest ancestors interacted with the world. **The importance of pounding tools is increasingly apparent.** In some cases, they have been compared with stone hammers and anvils used by chimpanzees for nut-cracking. However, **there has been little focus on providing a robust descriptive and quantitative characterization of chimpanzee stone tools,** allowing for meaningful comparisons between chimpanzee groups and with archaeological artefacts. **Here we apply a primate archaeological approach** to characterize the range of chimpanzee nut-cracking stone tools from Djouroutou in the Taï National Park. **By combining a** techno-typological analysis, and two- and three-dimensional measures of damage, **we identify** clear differences in the location and **extent of** damage between nut-cracking hammerstones and anvils used at Djouroutou and when compared with other wild chimpanzee populations. Furthermore, **we discuss these results in relation to** interpretations of Plio-Pleistocene

percussive technology. **We highlight potential difficulties in** identifying the underlying function of percussive artefacts based on morphological or techno-typological attributes alone. The material record from Djouroutou represents an important new datum of chimpanzee regional and material culture.

1. Introduction

Our earliest ancestors used a variety of stone tools to interact with, and modify the world around them [1–4]. Tools used for cutting and pounding tasks provided a competitive advantage in accessing different food sources, thus influencing the cultural and biological evolution of our species [5,6]. **The role of percussive artefacts for understanding Plio-Pleistocene hominin subsistence has received far less attention compared with stone flake technology** [7–10]. Both hammerstones and anvils used for percussive behaviours have been identified at several Plio-Pleistocene archaeological sites and indeed form a component of archaeological assemblages into the Later Stone Age [1,7,9–14].

WRITING A PAPER, MATERIALS AND METHODS

Whichever language you would normally write up your research in, it is probably best to start with materials and methods. Today the *Journal* will look at two aspects of writing:

- Writing in the passive voice / tense
- Linking words for writing a process

I- The passive voice

Writing in the passive voice is common in science to avoid putting the authors at the centre of the study. Instead the subject of the experiment becomes the focus.

Writing in the passive means **the subject is acted upon; it, he or she receives the action expressed by the verb**. The agent performing the action may appear later or may be omitted. When writing for science the agent will be omitted altogether. It is assumed that the actions are being done by the authors.

For example:

I took my dog for a walk.

Becomes:

The dog was taken for a walk.

Either the present or the past tense can be used when writing in the passive form, but as authors will normally be describing an experiment they carried out in the past, then the past tense will be used.

II- Linking words for describing processes

When describing a process it is necessary to describe the order in which things happened. For this we can use linking words. For example:

- First, second, third, etc.
- Firstly, secondly, thirdly, etc.
- First of all, initially, at the beginning
- Then, next, after this, subsequently,
- Prior to this, before this

II- The International System of Units

The International System of Units (SI) is the most used measurement system and frequently appears in the field of science. It uses the metric system based around the number 10. The system consists of base unts and a set of prefixes. Scientists are likely to need the names, symbols and prefixes when writing up scientific observations and describing the set up in the methods.

Table 1: SI base units

Unit name	Unit symbol	Quantity name
second	s	time
metre	m	length
kilogram	kg	mass
ampere	A	electric current
kelvin	K	thermodynamic temperature
mole	mol	amount of substance
candela	cd	luminous intensity

Table 2: English names and prefixes for the factors they represent

English name	symbol	factor	prefix	example
trillion (short scale)	T	12	tera	terabit
billion (short scale)	G	9	giga	gigabyte
million	M	6	mega	megaton
thousand	k	3	kilo	kilogram
hundredth	c	-2	centi	centimetre
thousandth	m	-3	milli	millisecond
millionth	μ	-6	micro	micromole
billionth (short scale)	n	-9	nano	nanometre
trillionth (short scale)	p	-12	pico	picocandela

III- Punctuation: the semicolon and colon

a- Periods

A period (.) is a form of punctuation used to end a declarative sentence. Periods are frequently, but not always used, after initials and with two-letter abbreviations

b- **Commas**

Commas have quite a few uses in English:

- Separating items in a list of three or more
- Connecting two independent clauses with a coordinating conjunction
- Setting apart non-restrictive relative clauses
- Setting apart nonessential appositives
- Setting apart introductory phrases
- Setting apart interrupters and parenthetical elements
- Setting apart question tags
- Setting apart names in direct address
- Separating parts of a date
- Separating parts of a location, like a city and its country
- Separating multiple coordinating adjectives
- Separating quotations and attributive tags

There are a lot of technical English words in that list, but don't worry. We explain everything in detail below.

When you have a list that contains more than two elements, use commas to separate them.

Julie loves ice cream books and kittens.

Julie loves ice cream, books, and kittens.

Julie loves ice cream, books and kittens.

(The comma before the *and* in a list of three or more items is optional. See below, under "Serial comma," for more information.)

Your list might be made up of nouns, as in the example above, but it could also be made up of verbs, adjectives, or clauses. Imagine, for a moment, that you have just finished doing three chores. The chores were:

- Cleaning the house and garage
- Raking the lawn
- Taking out the garbage

If you were to list these three chores in a sentence, you would write:

I cleaned the house and garage, raked the lawn, and took out the garbage.

or

I cleaned the house and garage, raked the lawn and took out the garbage.

c- Semicolon

The semicolon, like a comma, is used to break up the text and help the reader to understand the meaning. However, it is stronger than a comma – and weaker than a full stop. As it breaks the flow of text it is used less frequently than a comma.

For example:

This paper has not been well written; I recommend a major revision.

The gathered all of the samples for preparation; first they were cleaned to remove all unwanted items; second, they were heated to a temperature of 180 degrees Celcius.

in the ocean, turtles have been affected by climate change; the rise in sea temperatures means that…

The semicolon can also be used for dividing up a more complex list of items where a comma is not strong enough or the text is too complicated, **for example:**

More specifically, the sample design and the stratification were based on the following variables: (1) age (7 age groups: 16–17, 18–24, 25–34, 35–44, 45–54, 55–64: 65 +); (2) gender; (3) geographical breakdown (all Italian regions and size of the residential community, 7 classes); and (4) education (2 classes: graduates and non-graduates).

d- Colon

The colon is a break in the text that is used to introduce something that comes next, normally that is an explanation, a list or a quoted sentence. It can also be used in subtitles and appears heavily when creating lists of references, to introduce page numbers. It is normally followed by a lower case letter, but that will depend on what is coming next.

For example:

Listed by descending area these are the: South Pacific, North Pacific, Indian, North Atlantic, South Atlantic, Southern, and Arctic Oceans.

The aim of this study is simple: to evaluate the effect of climate change on…

Our analyisis can be viewed through the following definition:…….

WRITING MATERIALS AND METHODS SECTION

1-The passive voice

2.1. Materials and reagents

Paper mill sludge (PMS) **samples were collected** from two different local paper mill plants of Bangladesh as calcium-containing source materials. Hydrochloric acid (37%) and **sodium hydroxide** (CAS: 1310-73-2, Purity approx. 98.0%) **were purchased** from Merck, Germany and DAEJUNG, Korea, respectively. **Distilled water was used** throughout the work as needed. All **chemicals were utilized** without further purification.

2.2. Synthesis methods

First of all, the collected PMS was mixed with distilled water to prepare a homogeneous mixture which was then filtered by a suction pump. ***After filtration***, the mixture was dried in an electric oven at 60–65°C for 2 h in air until complete removal of water. ***Then it*** was crushed manually by using a ceramic mortar/pestle. ***Afterwards***, a certain amount of dry-solid sludge was taken in a beaker, mixed with distilled water, and then stirred for 45 min. ***Meanwhile***, 1.0 M HCl was added in solution to dissolve all the calcium contents in the aqueous medium, where pH of the sludge solution was maintained in the range of 2.25–2.50. ***After filtering*** the acidic solution, the filtrate part (very clear) was taken under base treatment by NaOH, maintaining a pH above 13.0 and the product formation/precipitation was seen to start within few minutes. The raw and synthesized samples were safely stored into the sample vials for various characterizations(a representative photograph of these samples is shown in electronic supplementary material, figure S1).

This extract is taken from: Molla MR et al. 2022 Facile extraction and characterization of calcium hydroxide from paper mill waste sludge of Bangladesh. R. Soc. Open Sci.9: 220681.https://doi.org/10.1098/rsos.220681

– higlight sentences that are written in the passive voice and find linking words.

When writing in the passive voice the sentence is normally flipped in order, with the subject appearing at the start of the sentence, and being acted upon.

We know from the above text that in the recent past the authors carried out an experiment on paper mill sludge samples. We know that the authors went to two different sites to collect the samples. They wrote:

Paper mill sludge (PMS) **samples were collected** from two different local….

The samples become the focus and have the action done to them. Look at other examples in the first paragraph of writing in the passive form:

Hydrochloric acid (37%) and **sodium hydroxide** (CAS: 1310-73-2, Purity approx. 98.0%) **were purchased** from Merck, Germany…

Distilled water was used throughout…

All **chemicals were utilized** without…

Have a look through the second paragraph of the extract and see if you can identify the rest of the examples of the passive form.

Have a look through the second paragraph of the extract to see how the linking words for describing the process are used: ***First of all, After filtration, Then it, Afterwards***, ***Meanwhile***, etc.

2- The personal form

Methods

We used 150 years (1870–2019) **of** gridded, **monthly** reconstructed historical SST ***data sources to evaluate*** centennial ***changes in global occurrences*** of extreme marine heat events: the Hadley Centre Sea Ice and SST dataset (HadISSTv1.1) [33] and the Characteristics of the Global SST data (COBESSTv2) [34] (Table A in S1 File). These independent and complementary global SST products were reconstructed from instrument records and the historical network of in situ measurements and have been widely deployed as ground-truthed SST fields [35, 36].

Our statistical ***definitions frame how we characterized*** the frequency and extent of extreme heat events across space and time. For each month, in each 1° × 1° grid, ***we defined the*** extreme marine heat ***as a monthly*** average SST value that exceeds the 98th percentile SST value observed over 1870–1919 (corresponds to the period of second industrial revolution), or hottest temperature observed in the earliest 50-year period of record (Fig A in S1 File) [37–39]. ***Such*** percentile based thresholds ***can be derived from*** climatological data and are robust to drivers or variabilities associated with individual extreme events [10]. ***Our particular*** percentile based threshold ***also easily relates to*** the standard deviation (σ) which offers an alternative expression of dataset anomaly–the 98th percentile is when σ = 2.05. Though they are limited in describing daily and hourly extremes, ***we selected*** monthly SST products in order to evaluate the properties of extreme marine heat events at a 1° × 1° scale within the longest historical context possible–150 years. At daily scales, species may respond to stressful abnormal temperatures by changing distributions but could suffer greater thermal-induced stress if an extreme heat event persists beyond one month. ***In addition***, extreme heat events at shorter time scales are more likely to be smaller in scale than our analyzed spatial units (e.g., EEZs, large marine ecosystems). ***Furthermore,*** statistical analysis of monthly-resolved temperature variations ***can offer*** centennial-scale proxies of the frequency of extreme heat event properties [11].

……

Next, to highlight any different information presented in our approach, **we compared the global variability** of the LEHI to a more traditional SST anomaly metric. For the year 2019, **we computed both spatial outputs** from the same 1870–1919 climatology and the same spatial scale (1° × 1°) to ensure that any differences are from the methodology alone. SST anomalies are widely used and an important impact parameter in climate extreme studies [10, 11, 21]. The difference in distributions of two climate indices derived from the same baseline period offers an alternative assessment of climate stress from the conventional anomaly-from-mean signals.

We conducted all data wrangling and **analyses in** the R programming environment [43], and **provided our data** and scripts in open access repositories (https://bit.ly/2QjhYld) and through the Open Science Framework (https://osf.io/mj8u7/).

This extract is from: Tanaka KR, Van Houtan KS (2022) The recent normalization of historical marine heat extremes. PLOS Clim 1(2): e0000007. https://doi.org/10.1371/journal.pclm.0000007

The first thing to note in this passage, is that the authors have written this passage using personal pronouns describing that 'We' did the experiment. This is clearly the convention in this field of climate science.

This means that the authors put themselves first in many sentences followed by the action then took (the verb) and then what they did it to (the subject). For example:

We used 150 years (1870–2019) of … data sources.

We conducted all data … analyses in the…

…we compared the global variability…

…we computed both spatial outputs from…

… **provided our data** and scripts…

Phrases for methods

This extract also uses several useful phrases for presenting your methods:

SST data sources ***to evaluate*** *centennial* ***changes in*** *global occurrences of…*: what is being ***evaluated*** is the main focus of this study. Evaluate means to assess something.

Our *statistical* ***definitions frame how we characterized…***: the ***definitions*** are essential to how the data are represented and understood.

we defined the *extreme marine heat* ***as a*** *monthly average…*: this sentence as more detail to the ***definition*** of how the data can be interpreted.

Such *percentile based thresholds* ***can be derived from***: derived from tells readers where something came from or where an idea or measurement came from.

Our particular *percentile based threshold* ***also easily relates to…***: this phrase ***'relates to'*** means the context that it can be viewed in or how it fits with something else.

we selected…: describes what was chosen.

The passage also includes several linking words for continuing the description in the next sentence:

In addition*, extreme…*

Furthermore,…

Next, *to highlight any….*

These phrases can all be used to introduce a new idea or item or the following part of the process.

Practice : active, passive voice

Current readability formulas (1) **base / are based** purely on what **(2) considers / is considered** dif fi cult for a native English speaker. They **(3) fail / are failed** to take into account problems that may **(4) encounter / be encountered** by non-natives. One thousand five hundred PhD students from ten countries **(5) asked / were asked** to evaluate the dif fi culty of fi ve technical texts from their discipline written by native English speakers. Three key dif fi culties **(6) identified / were identified**: unfamiliar vocabulary (typically Anglo-Saxon words), unfamiliar cultural references, and the use of humor. The paper **(7) also proposes / is also proposed** a new approach to assessing the level of readability of texts to account for such dif fi culties.

1. are based

2. is considered

3. fail

4. be encountered

5. were asked

6. were identified

7. proposes

3- Use of colon and semicolon

Sample characteristics

In this work, we focused on young adults (16–24) and adults (25+) so as to proceed with a self-administered questionnaire that was completed by the sampled respondents (younger individuals would have needed the direct assistance of their parents, making the filling in of the questionnaire very cumbersome). ***The final sample was composed of*** 6692 Italian individuals, ***representative of*** the Italian population in terms of age, gender, and geographical area. ***More specifically, the sample design*** and the stratification ***were based on the following*** variables: (1) age (7 age groups: 16–17, 18–24, 25–34, 35–44, 45–54, 55–64: 65 +); (2) gender; (3) geographical breakdown (all Italian regions and size of the residential community, 7 classes); and (4) education (2 classes: graduates and non-graduates).

Measures

To evaluate the effect of the pandemic on mood and feelings of the Italian population a psychometric ***approach was adopted***. ***Due to the*** special nature of the period which prevented to conduct experimental studies meeting participants face-to-face, a psychometric self-reporting ***methodology was chosen***. ***We adopted*** the SMFQ14 which includes 13 items indicating how much individuals have felt mentally distressed during the last few weeks……

Procedure

The field ***data collection was conducted*** in June 2020 (from the 4th of June to the 19th of June) ***with a mixed technique*** CATI (Computer Assisted Telephone Interviewing) and CAWI, (Computer Assisted Web Interviewing) as to limit any risks in terms of sample's distortion and self-selection. Both types of questionnaires were headed by a detailed description (either by phone from the interviewer or via the web before the start of the questions) of the research aims and objectives. ***In this context,*** the interviewees were informed that all their personal data would be acquired anonymously and in full compliance with privacy laws.

All methods were carried out in accordance with the Declaration of Helsinki. ***The experiment was approved by*** the Ethics Committee of Autorità per le Garanzie nelle Comunicazioni. Informed consent was obtained from all participants and from a parent and/or legal guardian for participants under 18.

This extract is taken from: Delmastro, M., Zamariola, G. Depressive symptoms in response to COVID-19 and lockdown: a cross-sectional study on the Italian population. Sci Rep ***10****, 22457 (2020).* *https://doi.org/10.1038/s41598-020-79850-6*

In this work, we focused on…: this phrase introduces the study.

The final sample was composed of,…… ***representative of***: describing the sample – in this case how people were chosen.

More specifically, the sample design and … ***were based on the following***… : this phrase describes how the study was designed.

To evaluate (to assess) the effect of the pandemic on mood … a psychometric ***approach was adopted***: the evaluation is the key aspect of the study.

…..methodology ***was chosen***. ***We adopted*** : The words 'chosen' and 'adopted' are useful for describing what methods you used. You may need to describe ***why*** they were adopted/chosen.

The field ***data collection was conducted*** in ….. ***with a mixed technique:*** This phrase is used to describe what happened in the study.

All methods were carried out in accordance with: useful phrase to describe how research was conducted.

The experiment was approved by: For researchers in health this phrase is used commonly as most research needs to be approved by an ethical committee.

Due to the….. and ***In this context….*** : These two phrases can be used as linking words to introduce the next sentence.

4- Practice : conditional would / should in the past

The Heaf test was performed in accordance with BTS guidelines. Initially it was not anticipated that there (1) **would be / would have been / was** a need to offer BCG vaccinations on site to clients (i.e. homeless people) as it was assumed that, like the general population, only a small minority would **have / would have had / had** negative Heaf tests without BCG scars. This meant that at the beginning of the study, a number of Heaf tests (3) **would be performed / would have been performed / were performed** on clients without recording their BCG status. Clients referred to the chest clinic were those admitting to haemoptysis within the previous three months. It was decided that haemoptysis (4) **should be / should have been / was** the only symptom meriting referral to a chest clinic as a large number of the study population were likely to have persistent coughs and not all could be referred to a chest clinic.

- **Answer**

1. would be

2. would have

3. were performed

4. should be

WRITING RESULTS AND DISCUSSION

I- Describing data

I-1- Increases and decreases : use of Adverbs and adjectives

You can use the following words to describe increases or decreases :

Considerable / considerably (meaning 'large') – e.g. there was a considerable increase in…

Consistent / consistently (meaning 'no change') – e.g. the rate of infection was consistent across the different….

Down / downwards (meaning 'move lower') – e.g. Figure A shows a downward trend in the ratio of…

Gradual / gradually (meaning 'slow rate of change') – e.g. Table 2 shows a gradual improvement in results of….

High / highly / highest (meaning 'large') – e.g. The pollution levels remained high during all of the period under investigation…

Just under / Just over (meaning 'little') – e.g. The results showed a slight increase from 0.5 to just under 0.6….

Marked /markedly (meaning 'a large change') – e.g. The results from the intervention showed a marked improvement over the traditional method…

Negligible (meaning 'very small or too small to be significant') – e.g. Figure A shows that the difference in outcome between the methods as negligible.

Sharp / sharply (meaning 'a large change') – e.g. The steep curve in Figure B shows a sharp increase in the amount of….

Significant / significantly (meaning 'a change of importance') – e.g. The results show in Table 1 are not statistically significant… or… The results are statistically significant

Steady / steadily (meaning 'change in a smooth way that is not unexpected') – e.g. The data in table 2 shows a steady decrease in the amount of…

Up / upwards (meaning 'a move higher') – e.g. The graph shows an upward trend in the number of….

I-2- Use of Comparative adjectives

comparative adjectives are often use to describe results. For example:

*Study group A showed a much **greater** improvement than group B.*

Table 1: Making comparative adjectives

Type of adjective	Rule	Comparative adjective
One-syllable adjectives	+er	short → **shorter**
One-syllable adjectives that end: consonant + vowel + consonant	double the last consonant +er	big → **bigger**
Two syllable adjectives ending in 'y'	remove 'y' +ier	easy → **easier**
Adjectives with two or more syllables	use 'more' before adjective	popular → **more popular**
Irregular adjectives	NO RULE	good → **better** bad → **worse**

You may also need to use adverbs of frequency, which are listed below in order of increasing frequency:

Never > **rarely** > **seldom** > **occasionally** > **sometimes** > **often** > **generally** > **usually** > **always**.

Other common words for describing data are:

Less, **fewer**, **more**, **much**, **many**

I-3- Quantifying measurements and amounts

When describing results authors have to frequently use words that give quantitative analysis to describe the data they have collected and to describe the useful and interesting characteristics of it.

Below are some typical phrases that might be useful in quantifying research:

To measure / to calculate / to determine / to estimate…

The size of / the amount of / the number of / the volume of / the level of / the frequency of / the percentage of…

…was calculated as/with…

…was calculated as follows

…was determined as…

…was measured by…

The calculations show

Table 1: words describing amounts

all of	**most of**	**lots of**	**approximately**	**parity**	**some of**	**small amount of**
exactly	virtually	many	nearly	equal to	several	a fraction of
precisely	almost	much	roughly	the equivalent of	fewer than xx%	little
	nearly	numerous	vaguely	is equal to	a limited number	no (amount of)
	majority	countless	within the range of	in balance with	of these	very few
		a significant number		proportional to		scarce
		half			a quarter	lack of

Below are some common words to describe the order of what is being reported:

In alphabetical order…….

In chronological order…

In numerical order…

In sequence of….

Ranked by……

Graded according to …….

Categorised by / category…..

II- Stating how a finding is important

In the results or discussion section of your article you will need to highlight why a finding is important. Likely there will be more than one result from your study, but you will need to explain to the readers what is consequential and why. The phrases below can help you to do this:

These results imply that…

This study raises the possibility that…

These findings may help us to understand…

This underlines the importance of…

This may be due to…

These results suggest that [x] is due to [y] rather than…

The benefits of this method are shown by…

This means that we can link [x] and [y]…

This indicates that…

These results show it is clear that…

These findings indicate that…

The most significant aspect is that…

The evidence shows…

We can speculate that…

We can therefore distinguish between…

The consequences of this discovery are…

We might interpret…

There are potentially important implications raised by…

Our interpretation of this is…

III- negative results and contradictory findings

Many studies result in contradictory findings or produce negative results that do not match your hypotheses. The results of these studies could still be interesting and worthwhile to document. Below are some useful phrases below for presenting these findings.

III-1- Negative results

There was no detectable effect on…

There was no correlation between [x] and [y]…

The results of [x] were negative…

There was no increase of…

There was no significant difference between the control and study group…

With minimal difference between…

Only one group showed any significant change…

With little impact on…

It seems unlikely [x] was affected…

We recorded no change in…

The study was unsuccessful in…

III-2- Contradictory results

The results contain a number of contradictions…

These results give the opposite…

The opposite of the…

These results are in direct opposition to…

It remains unclear why…

Contrary to earlier findings…

These results show that in reality…

The reverse of our expectations…

In contrast to previous studies

The difference shown…

There is an important distinction…

These results differ significantly from…

IV- Accurately and avoiding certainty

In many instances how authors present findings may be cultural, for example whether an author is modest about results or overly enthusiastic in their writing may partly depend on the audience that they are used to communicating with and the cultural expectations. However, in all cases it is worth being careful to phrase results accurately. Where it is a reality that results are not

100% conclusive it is important to state this. Where there is the possibility of alternative explanations it is important to state that also. Below are some phrases to help you describe the limitations of what you have discovered.

IV-1- Cautious interpretation of results

These findings showed a 60% level of accuracy…

Of the four groups, the findings in group A only showed positive…

From the results it is not conclusive that…

These results could be biased by…

The small sample size means that further research…

These results need to be interpreted with caution because…

Although [x] has been proven, it is not the greatest factor in determining…

IV-2- Alternative explanations

These results show the possible / probable / likely cause of…

The bleaching of coral reefs	may be could be might be is almost certainly	due to an increase in sea temperature.

It may be It is likely It could be It is possible It is probable It is almost certain	that the bleaching of coral reefs	is due to an increase in sea temperature.

A likely explanation A probable explanation A possible explanation	is that	coral bleaching	is a result of a rise in sea temperatures.

- ***Useful phrases***

This inconsistency could be due to…

A possible explanation is that…

It seems possible that…

There are several explanations for this…

These results contradict previous studies… which may be due to…

The likely causes of this difference are that…

It is important not to overstate this result given that…

It is not clear why…

These data do not adequately explain…

The reasons remain unclear…