

# Wayfinding and mental health

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# Mental health

- Mental illnesses are health conditions that involve changes in emotion, thinking or behaviour (or a combination of these).
- 26% of all adults in England have at least one mental illness according to the Health Survey for England 2014.
- A further 18% have experienced mental illness without being diagnosed.

## Mental illness

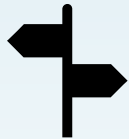
- **Anxiety** can make decision-making more difficult and cause forgetfulness. It can lead to changes in behaviour including being worried about being in new situations and can lead to avoidance of places and situations that stimulate anxiety.
- **Depression** can make thinking, concentrating and decision-making difficult.
- Other types of mental illness include agoraphobia, post-traumatic stress disorder (PTSD) and obsessive-compulsive disorder (OCD).
- The symptoms of mental health conditions can affect travelling and wayfinding.

# The mental processes underlying wayfinding

## Sources of information



Memory



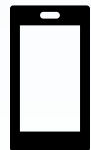
Signposts



Landmarks



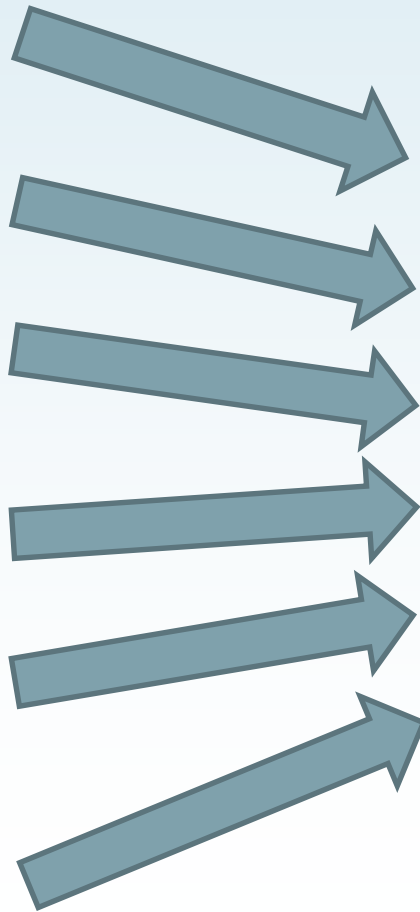
Maps



Mobile phone



Other people



Decision taking



**Mental illness can affect these processes**

# What causes anxiety when wayfinding?

- Actual and perceived poor wayfinding ability (Lyons et al., 2018).
- This may be associated with childhood experience such as being allowed out to explore the local environment (Lawton and Kellai, 2002; Vieites et al., 2020).
- Confidence in interpreting the local environment (Bonfanti et al., 2017).
- Co-morbidities such as dyslexia can make wayfinding more challenging (Lamont et al., 2013).

# How does mental health affect wayfinding?

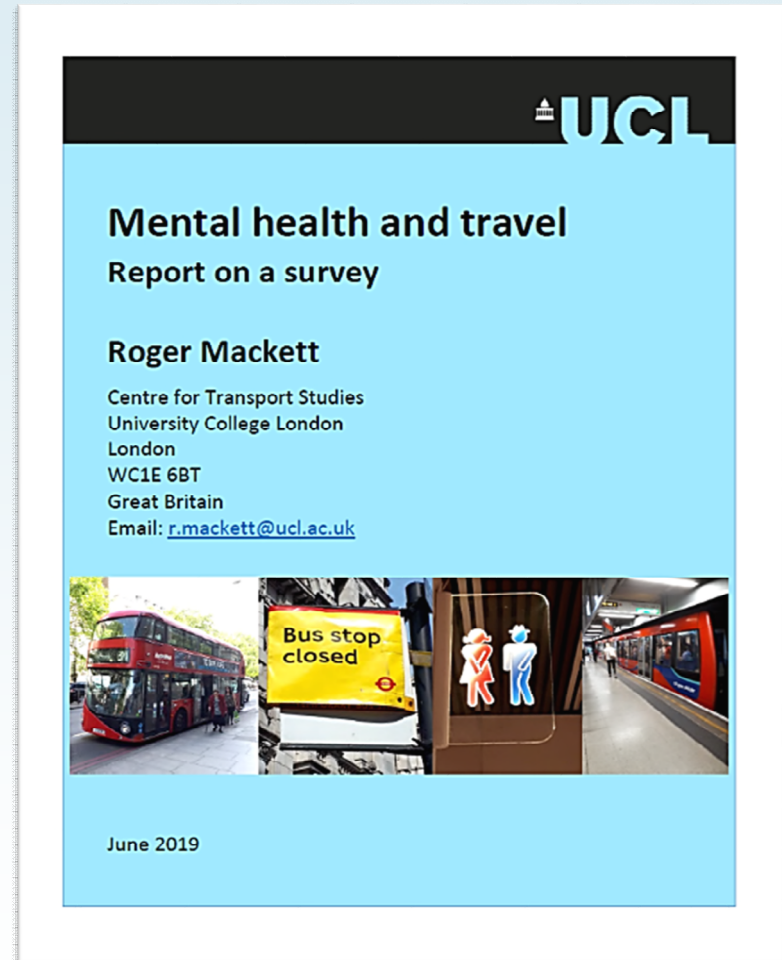
- Anxiety can cause navigation errors (Hund and Minarik, 2006).
- It can disrupt cognitive control and memory during route planning (Brown et al., 2020).
- Disorientation episodes can lead to cognitive dissonance in the wayfinding process (Montello and Sas, 2006).

## Ways of coping with wayfinding anxiety

- Rely on directional signs rather than landmarks to find the way (Su et al., 2021).
- Plan journeys ahead to improve awareness of journey length, route and connections (Penfold et al., 2008).
- Avoid certain modes of travel and environments (Posner and Sharp, 2020).
- Use wayfinding apps (Qing et al., 2021).

# A survey was carried out to examine these issues

- On-line survey of people with mental health conditions carried out in Great Britain.
- Link to survey sent out on social media etc. by 18 mental health and transport organizations.
- Survey results weighted to match the age and gender profile of similar people in the Adult Psychiatric Morbidity Survey (APMS).
- 363 responses used here.



Available from: <https://bit.ly/2lviXbs>



# The questionnaire

There were questions on:

- The mental health of the respondent;
- The effects of the respondent's mental health on travelling;
- Travel by bus, rail, car and walking;
- Initiatives to encourage travel;
- Use of mobile phone apps;
- Employment;
- Age, gender, area type.

## Survey on mental health and travel

The purpose of this survey is to examine the issues that can make travel difficult for people with mental health conditions.

Please answer the questions below. Your answers are anonymous. It will not be possible for anyone to identify who has answered the questions. Should giving answers to these questions cause you to feel anxious you should stop, and then, if necessary, seek advice from an appropriate person such as your GP, counsellor or carer.

You should answer the questions on the first page and then click on "Start" at the bottom of the page. After that, answer the questions on each page, click on "Next" to go to the next page, and continue until the last page where you should click "Finish". You can return to questions on previous pages by clicking on "Back". It should take about ten minutes to complete the questionnaire. If you wish to stop and continue later, click on "Save".

### 1. About you

- Do you have a mental health condition?
- Are you a carer for a person who has a mental health condition?
- Neither of these

If you are a carer for a person with a mental health condition, please answer the following questions as if you were that person.

If you have answered 'Neither of these', you should leave the questionnaire now. Thank you for your interest in this work.

### 2. Do you have any of the following mental health conditions? (Please tick all that apply)

- Anxiety (including social anxiety and panic attacks)
- Depression
- Agoraphobia
- Obsessive-compulsive disorder (OCD)
- Post-traumatic stress disorder (PTSD)
- Bipolar disorder

## The mental health of the respondents

Mental health condition	% of respondents
Anxiety	89
Depression	68
Post-traumatic stress disorder (PTSD)	20
Obsessive-compulsive disorder (OCD)	14
Agoraphobia	13
Bipolar disorder	7
Other	23

Number of respondents: 363.

Average number of conditions per respondent: 2.6.

# The effects of the mental health conditions

	%
	All
Social anxiety	87
Panic attacks	67
Communication difficulties	49
Impaired memory	45

# The effects of the mental health conditions

	% of respondents		
	All	Male	Female
Social anxiety	87	87	87
<b>Panic attacks</b>	<b>67</b>	<b>51</b>	<b>76</b>
Communication difficulties	49	56	45
Impaired memory	45	43	45

## Anxieties when travelling

Type of anxiety	% of respondents
Interacting with fellow travellers	84
Needing support	82
<b>Wayfinding</b>	<b>67</b>
Needing to take urgent action	63
Interacting with staff and purchasing tickets	51
Something else	14

# Anxieties about wayfinding

Aspects of wayfinding	% of respondents
Feeling disorientated	46
Getting lost	36
Having to take decisions about where to go	35
Remembering where they are going to	19
Overall	67

# Anxieties about wayfinding

Aspects of wayfinding	Male	Female
Feeling disorientated	43	48
Getting lost	33	37
Having to take decisions about where to go	24	41
Remembering where they are going to	15	21
Overall	60	71

# Experiencing anxiety when wayfinding

## ***Effects of poor memory:***

- *“When visiting a friend I had been to see several times before, I forgot the way and got lost and her partner had to come and get me” (Woman aged 41-50).*

## ***Feeling disorientated:***

- *“I went to vote in the recent local elections. Even though I researched how to get there I became disorientated and started getting really scared so I turned back and came home” (Woman aged 41-50).*

## ***Becoming lost:***

- *“When I get lost I panic and cry. A lot. And when I panic I lose the ability to speak, which makes things worse” (Woman aged 31-40).*



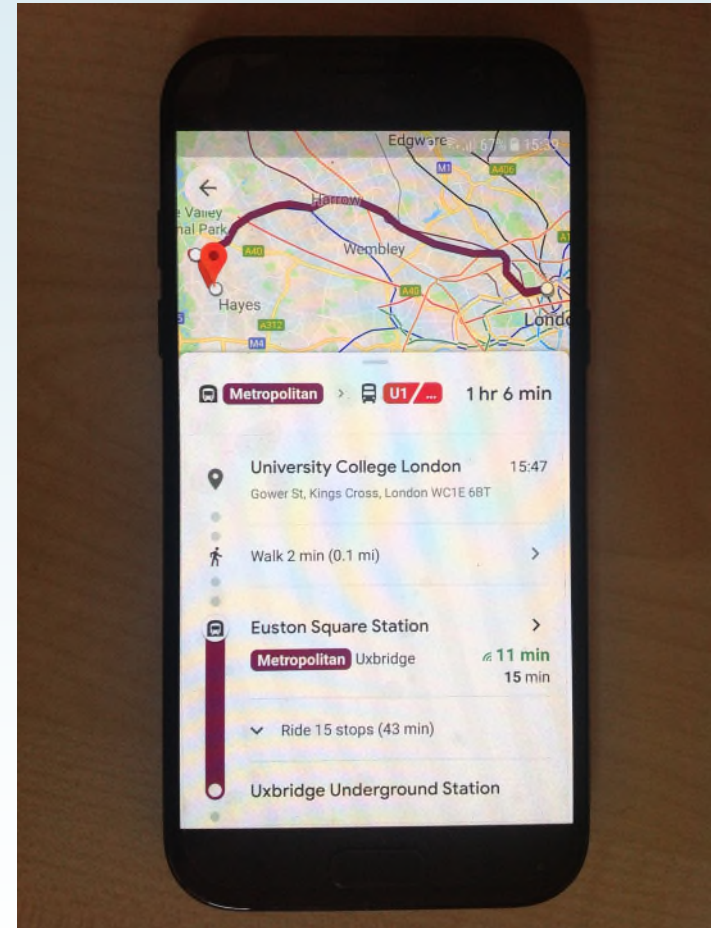
# Use of mobile phone apps when travelling

- About 65% of the respondents used mobile phone apps when travelling.
- Slightly more men used them (68%) than women (63%).
- Usage decreases with age:

Age	% of age group
< 31	83
31-40	78
41-50	61
51-60	54
61+	38

# Popularity of mobile phone apps

	%
Google Maps	44
Citymapper	12
National Rail Enquiries	9
TrainLine	5
Transport for London (TfL)	5
Tube Map	4
Apple Maps	3
Waze	1
Bus Times	1
Moovit	1
Unspecified and other apps and websites	29



Figures are percentages of respondents who use apps

# Factors that might encourage the respondents to walk more



Factor	% of respondents
Better behaviour by other people	44
Less noise	37
Less traffic	34
More toilet facilities	29
Better pavements	28
Less clutter on the street	21
Better signposting on the street	21
More places to ask for help	18
Something else	13

# Factors that might encourage the respondents to travel by bus more

Factor	% of respondents
Better behaviour by other travellers	50
Clearer information on board the bus about the route and the next stop	48
Clearer bus timetables and maps	45
Better trained bus drivers	32
Clearer websites	30
More toilet facilities	28
Something else	12

# Factors that might encourage the respondents to travel by rail more

Factor	% of respondents
Better behaviour by other travellers	48
Being able to contact a member of staff in person when on the train	42
Better trained station and on-board staff	41
Clearer information on board the train about the route and the next stop	33
Clearer rail timetables and maps	36
More toilet facilities	37
Clearer websites	25
Something else	13

# Differences between men and women in improvements that would make them travel more

		% of respondents	
		Male	Female
<b>Walking</b>	Less clutter on the street	32	14
<b>Bus</b>	Clearer route and next stop information on the bus	35	55
<b>Rail</b>	Being able to contact a member of staff in person when on the train	28	50
	Clearer route and next stop information on the train	23	39
	More toilet facilities	42	34

# Men want



# Women want



# And don't want



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## Conclusions

- Wayfinding uses mental skills to take decisions using information from various sources.
- Mental health conditions can affect these skills.
- Various aspects of wayfinding cause anxiety, especially for women.
- Many people with mental health conditions use mobile phone apps to assist in wayfinding.
- Google Maps is by far the most popular app.
- Clearer information on board buses and train about the route and the next stop would encourage more use of these modes.
- Better signposting and less clutter on the street would encourage more walking.



## For further information

- Mackett R L (2021) Mental health and wayfinding, **Transportation Research Part F: Psychology and behavior**, **81**, 342-354, <https://doi.org/10.1016/j.trf.2021.06.014>.
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- Mackett R L (2019) Mental health and travel: Survey report, Report, Department of Civil, Environmental and Geomatic Engineering, University College London, <https://bit.ly/2lviXbs>.
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