

Effectiveness of Mental Health Warnings on Tobacco Packaging in People With and Without Common Mental Health Conditions: An Online Randomised Experiment

Katherine Sawyer (she/her)

Katherine Sawyer¹, Chloe Burke¹, Ronnie Long Yee Ng¹,
Tom P. Freeman¹, Sally Adams², Gemma Taylor¹

¹Addiction and Mental Health Group (AIM), Department of Psychology, University of Bath, Bath, United Kingdom

²Institute for Mental Health, University of Birmingham, Birmingham, United Kingdom

Conflict of Interest

- GT had previously received funding from Grand (Pfizer) for work not related to this project.
- The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Background

- Smoking is leading cause of preventable illness and death.
- Smoking is a major driver of health inequalities and targeted interventions are required.
- Smoking tobacco increases the risk of developing mental health conditions, such as depression, schizophrenia and bipolar disorder (Wootton et al., 2019; Vermeulen et al., 2019).
- Health warning labels on tobacco packaging are a cost-effective means of health risk communication (Hammond, 2011).
- There are none in the UK that currently portray the negative impact of smoking on mental health

Aims and methods

Develop novel mental health warning labels for tobacco packaging

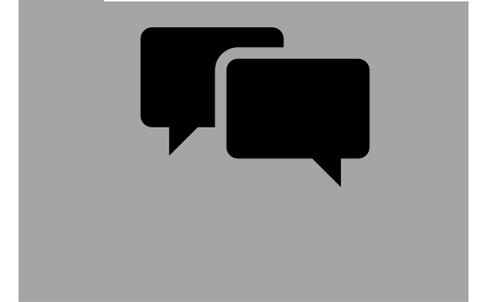
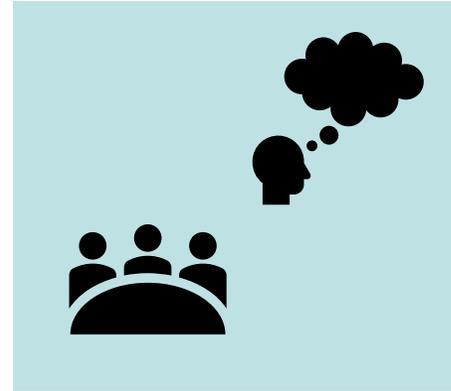
Address the following exploratory research questions:

1. Are Mental Health Warning Labels (MHWLs) rated differently to Physical Health Warning Labels (PHWLs) on measures of perceived effectiveness, believability, arousal, valence, acceptability, reactance, novelty of information, and potential effectiveness?
2. Do ratings of warning labels differ according to smoking status or mental health status?
3. Does the difference in ratings between PHWLs and MHWLs vary according to smoking status or mental health status?

Protocol was pre-registered on the Open Science Framework (OSF) (DOI [10.17605/OSF.IO/37X56](https://doi.org/10.17605/OSF.IO/37X56)).

Ethical approval was obtained from PREC at the University of Bath on 27/April/2020 (PREC ID 20-028)

Developing the labels



- Informed by evidence
- PPI Consultancy focus group, 3 members with lived experience
- preferred phrases such as ‘smoking increases the risk of...’ or ‘smoking increases symptoms of’, rather than ‘smoking causes...’
- text warnings that related to symptoms of mental health problems such as anxiety, stress and tension, rather than the mental health diagnostic term
- group highlighted the importance of using a representative sample of people in the pictures
- preferred pictorial warnings that showed real life experiences of mental health problems, as opposed to artistic representations
- strongly against the use of graphic images (such as images of overdose or self-harm)

The Mental Health Warnings



**Smoking increases
anxiety and tension**

Get help to stop smoking at www.nhs.uk/quit



**Smoking increases the
risk of bipolar disorder**

Get help to stop smoking at www.nhs.uk/quit



**Smoking increases the
risk of schizophrenia**

Get help to stop smoking at www.nhs.uk/quit



**Smoking harms
your mental health**

Get help to stop smoking at www.nhs.uk/quit



**Smoking increases
the risk of depression**

Get help to stop smoking at www.nhs.uk/quit



**Smoking makes
stress worse**

Get help to stop smoking at www.nhs.uk/quit

The Physical Health Warnings



**Smoking clogs
your arteries**

Get help to stop smoking at www.nhs.uk/quit



**Smoking causes
strokes and disability**

Get help to stop smoking at www.nhs.uk/quit



**Smoking damages
your teeth and gums**

Get help to stop smoking at www.nhs.uk/quit



**Smoking causes 9 out
of 10 lung cancers**

Get help to stop smoking at www.nhs.uk/quit



**Smoking increases
the risk of blindness**

Get help to stop smoking at www.nhs.uk/quit



**Smoking causes
heart attacks**

Get help to stop smoking at www.nhs.uk/quit

Methods

- An online, randomised experiment
- Rated six mental health warning labels and six physical health warning labels
- People with common mental health disorders vs. people without common mental health disorders
- Smokers vs non-smokers
- Smokers: at least 100 cigarettes during their lifetime, smoking at least once per week
- Mental health problems: (≥ 8) on the GAD-7, (≥ 10) on the PHQ-9
- Aged at least 18
- UK Residents
- Recruited mostly online (Covid!)

Outcomes

Primary outcome: Effectiveness

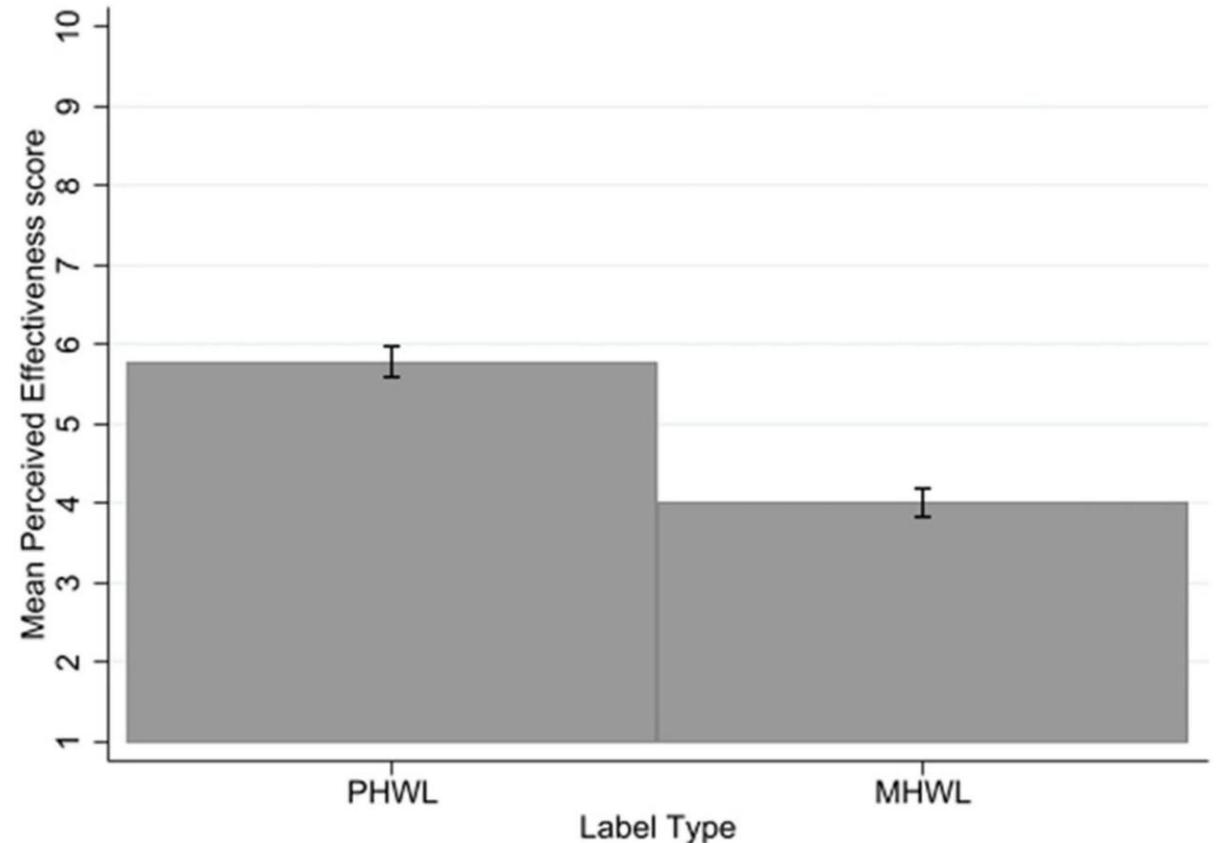
“Overall, on a scale of 1–10, how effective is this health warning? (e.g., in encouraging smokers to quit, increasing concerns about smoking, and discouraging youth from starting to smoke)”, with 1 as not at all and 10 as extremely.

Secondary outcomes:

- believability, arousal, valence (SAM), acceptability, reactance and novelty of information.
- Free text qualitative responses

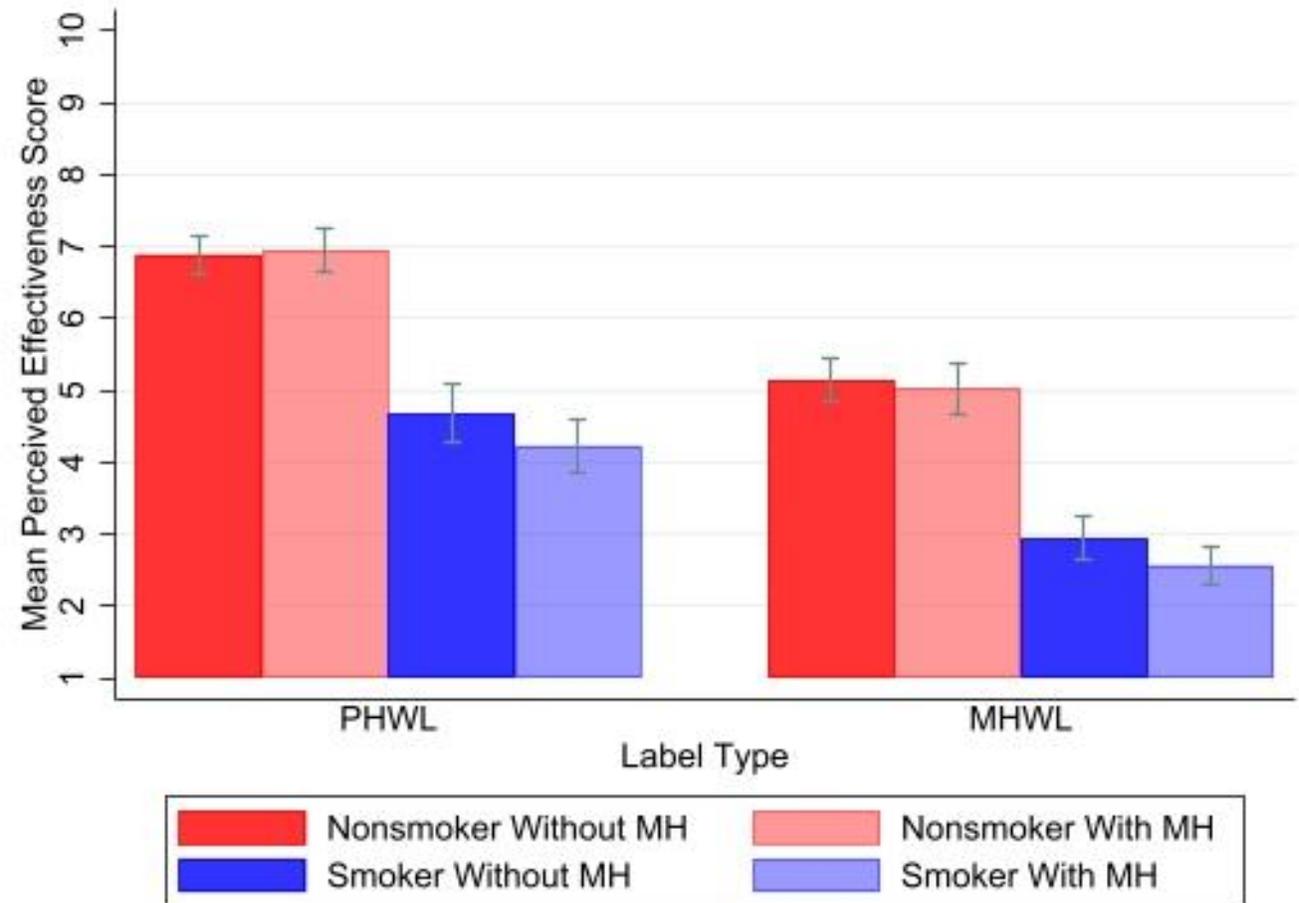
Results

- 687 participants, Age 41.78 (SD = 15.48)
- Females 78.46%
- MHWLs were perceived as low to moderately effective (mean = 4.02, SD = 2.40), **but less effective than PHWLs** (mean = 5.78, SD = 2.55, $p < 0.001$, $\eta_p^2 = 0.63$).



Perceived Effectiveness by smoking status and mental health status

- no significant main effect of mental health status on perceived effectiveness
- significant effect of smoking status on perceived effectiveness
- non-smokers perceiving labels as more effective than smokers



Results

- MHWLs were perceived as less believable, arousing, unpleasant, and acceptable than PHWLs.
- MHWLs evoked more reactance and were rated as more novel.
- Perceptions of MHWLs did not differ in people with and without mental health problems except for reactance and acceptability
- Smokers perceived labels as less effective, believable, arousing, acceptable, novel, more pleasant and had higher reactance.

Some qualitative feedback

Mixed support

- Inform public about risk of smoking for mental health
- Manipulative, ineffective

Conflicting responses around images

- Vague, inaccurate or inappropriate
- Represented condition well, suited to text component

Potential for stigma

Previous understanding or beliefs important

Discussion

- MHWLs could be perceived as less effective due to the causal language used. PHWLs had more causal language.
- How graphic the images were could explain the differences between the warning labels, as PHWLs had more graphic images than the MHWLs
- Difficult to represent mental health problems in a picture
- Misattribution hypothesis: smoking can alleviate stress or help people to cope

Strengths and Limitations

Strengths:

- Large sample
- PPI throughout

Limitations:

- Self report measures
- Only common mental health conditions
- Mostly white females
- Recruitment method

Conclusion



MHWLs were identified as low to moderately effective method for the communication of health risks of smoking on mental health.
Less effective than PHWLs.

Refinement of the MHWLs is necessary

Need to balance the need to inform the public of mental health effects of smoking with the risk of creating stigma

**Thanks for listening
Any questions?**



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 @SawyerK03  @Bath_AIM  ksls20@bath.ac.uk