Emotional Intelligence, Self-esteem, Self-efficacy, and Media Sources as Predictors of the Continuing Influence Effect of Misinformation

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Abstract

People are regularly presented with information, which is subsequently updated or corrected, however even when a correction is accepted, some people will continue with or revert to the original inaccurate information. This study investigated if emotional intelligence, self-efficacy, self-esteem, and news source reduce the continuing influence of misinformation. The cross-sectional study was an opportunistic survey (n = 176) presenting participants with paragraphs containing key facts followed by a retraction/correction of the key fact. The participants answered questions on the key facts when presented, after retraction and at the end of the survey. Measures for emotional intelligence, self-efficacy, and self-esteem were completed. The misinformation responses were compared using ANOVA or Cochran's tests, and a swing back towards the misinformation could be seen despite the earlier retraction. Linear regression indicated emotional intelligence as predictive of higher acceptance and belief of corrections, whereas self-efficacy was predictive of a lower score, and self-esteem was not significant. Source comparison indicated information from traditional media was more influential in countering misinformation than social media. Given the pervasiveness of misinformation in society, it is important to understand the underlying individual differences and the differences due to the media accessed which can impact the continued belief in misinformation.

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Misinformation is information that should, or could be corrected (Lewandowsky et al., 2020). It covers a broad spectrum from satire, rumours, out-of-date scientific theories, conspiracy theories, etc. Within this spectrum, fake news is misinformation when applied to news events, fake news will normally have mal-intent and potentially include motivations such as personal or ideological gain (Ackland & Gwynn, 2020). Another subset is post-event misinformation where information suggested after an event becomes part of the person's memories of the event e.g., false memories of a referendum campaign where the later proffered information is in alignment with beliefs (Ecker et al., 2015; Murphy et al., 2019). Misinformation has been in existence for a long time, Jonathan Swift's quote from his essay Political Lying is as relevant today as it was in 1710 "Falsehood flies, and truth comes limping after it, so that when men come to be undeceived, it is too late; the jest is over, and the tale hath had its effect" (Swift, 1710, para. 9). Instances of newspapers being involved in false stories are noted as far back as 1835, the 'Great Moon Hoax' (Pennycook & Rand, 2021). But issues with misinformation may have become more widespread since the advent of the internet and the surge in internet use as an unregulated news source. This spread of misinformation has societal, political, and health implications, examples of misinformation and its effects include US election campaigns; the fraudulent linking of vaccines to autism; the Brexit referendum, and Covid-19 conspiracy theories (Lewandowsky et al, 2012; Pennycook & Rand, 2021). Unfortunately, there seem to be minimal political consequences to spreading misinformation even when corrected and belief in the original misinformation is reduced, feelings towards political figures are not affected (Swire-Thompson et al., 2020).

As the existence and spread of misinformation is impossible to eradicate, psychological research into interventions to enable people to recognise fake news before it becomes a memory is part of the response to this problem. Online interventions include training to spot fake news

(inoculation), social media organisations working to flag information as false (labelling), or internet warnings about possible fake news content (prebunking) (Brashier et al., 2021; Lewandowsky & van der Linden, 2021). If pre-emptive action is not possible, then the correction of misinformation (debunking) should happen as soon as possible and preferably before the encoding of information into memory (van der Linden, et al., 2021). It is possible to correct or retract misinformation that people have been exposed to; newspapers print retractions (Office of the Press Ombudsman, 2022), and some organisations such as factcheck.org attempt to correct common misconceptions among the public (Ackland & Gwynn, 2020).

However, research suggests that even when such corrections occur, the memory of the original misinformation can persist (Ecker et al., 2015). This phenomenon is known as the Continued Influence Effect (CIE), and it can occur even when an individual believes the correction to be true. Examples of the continuing influence effect of misinformation include the infamous weapons of mass destruction during the Bush era, 20% of Americans despite rebuttals and evidence still believed they existed (Kan et al., 2021). Even when an individual accepts the correction as true, the misinformation may be recalled as the correct memory, or as a memory that sows doubt, e.g., the incorrect attribution of the cause of autism to a vaccine resulted in long-running doubts among parents and medical professionals (Lewandowsky et al., 2012). Theories on the continuing influence effect include a proposition that rebuttal of the original information can leave a gap, for which the original information is a perfect fit (Walter & Tukachinsky, 2020). To revisit the above example the removal of the weapons of mass destruction as a reason for war made the story incoherent and left a weapon-shaped gap to be refilled by the original misinformation. Successful debunking may require multiple rebuttals of the misinformation due to the continuing influence effect reasserting belief in the original misinformation as time passes (Lewandowsky et al., 2020).

People rely on heuristics (shortcuts) to reduce the time needed to digest information or make decisions (Kahneman, 2012). With no knowledge (ignorance), heuristics provide a basis for

belief or decisions (Lewandowsky et al., 2012). Interestingly, using heuristics due to ignorance of the topic does not have a continued influence effect or belief conviction (Lewandowsky et al., 2012). With social media usage, heuristics are useful for quick decisions when scrolling; does the information confirm prior beliefs or opinions, is it plausible, do other people believe it (likes and social conformity), and is the source credible (Ackland & Gwynn, 2020; Ecker et al., 2014; Lewandowsky et al., 2012). These first intuitive – gut feelings – can have a 'feeling of rightness' (FOR) and with this, if the initial viewing fits in with our biases and heuristics, then there is a lower probability of a later change of view (Thompson et al, 2011). Heuristics and the feelings of rightness of the trustworthiness and perceived expertise of the source of the misinformation may also lead to a continuing influence effect, particularly if the correction is not from a source with greater perceived trustworthiness and expertise (Ecker & Antonio, 2021; Guillory & Geraci, 2013; Walter & Tukachinsky, 2020). Heuristics can be influenced by a person's usage of social media due to the volume of repetition of the information viewed i.e., echo chambers on social media where the person only hears likeminded views or filter bubbles where the social media algorithm promotes similar information into their feed (Ackland & Gwynn, 2020). People's belief in the accuracy of a statement, except for completely implausible facts, is increased by seeing it more than once, an illusory truth effect, creating a familiarity heuristic (Pennycook et al., 2018). Practically, the implications for heuristics are that the correction needs to fit into the person's beliefs and worldview, same source corrections work best, but if this is not possible, discrediting the source and ensuring that the correction is as plausible and as coherent as the original information, leaving no gaps be later filled by the original misinformation (Walter & Tukachinsky, 2020).

Leaving aside heuristics, the ability to discern misinformation is compromised if the individual consumes more than average amounts of news, they recognise true information but also have an increased belief that fake stories are also true (Calvillo et al., 2021). Fake news exposure is associated with an increased distrust of the mainstream media and can diminish the credibility of the media industry (Ognyanova et al., 2020). The consequences of this reduced trust in the media

became an issue in the recent pandemic where correlations were seen between higher social media use, pandemic conspiracy beliefs, and reduced health protective behaviours but mainstream media usage was found to have an opposite effect (Allington et al., 2021). Similarly, trust in government and higher education levels was correlated with fewer beliefs in Covid-19 misinformation and the converse for those who trusted social media (Delmastro & Paciello, 2022; Melki et al., 2021). Unlike Brasher & Schacter (2020) older age was found to be correlated with less belief in Covid-19 conspiracy theories and fake news belief possibly due to lifestyle factors i.e., use and trust of mainstream regulated media rather than social media for health advice (Allington et al., 2021; Ramos et al., 2022). It is not clear from the existing research if it is that people are influenced by their normal media and maintain or revise their opinions in line with this normal source or if presented with alternate media (social media v traditional media) if one has more influence than the other over the recall of misinformation or the retraction.

For the correction to reduce the continuing influence effect, the person correcting misinformation must be a subject matter expert and, more importantly, highly trustworthy (Guillory & Geraci, 2013). When topics such as medical facts are used to combat Covid19 misinformation, the credible source needs to have influence and authority and be able to present the information in a well-argued and easily understood format (Wang et al., 2022). Explaining the reason for the misinformation, genuine accident, or intentional misdirection does not help reduce the continuing influence effect of misinformation (Connor et al., 2022). However, targeting the misinformation during the correction process and providing alternative correct information can help, at least for short-term memory (Kan et al., 2021). Lack of memory for the correction rather than the belief in the correction is implicated in the continuing influence effect, repeated corrections may be needed even when the person initially revises their beliefs but forgets the correction (Swire-Thompson et al., 2023). Repeated iterations of correct information reduce the influence of the original misinformation, but the effectiveness of any correction is reduced if the person is distracted or preoccupied (Sanderson et al., 2022). The format that works best for debunking is to explain in a

manner that is clear, plausible and fits the story, include one repetition of the misinformation and why it is wrong, and finish by repeating the correct information one more time (Lewandowsky et al., 2020)

Given the continuing and reasserting effect of misinformation, the correctly formatted corrected information should be targeted and formatted for the populations at most at risk of belief and maintained belief in fake news and misinformation (McIlhiney et al., 2021). Specific individual differences that give a vulnerability to the belief of misinformation and its continuing influence effect include lower cognitive abilities (De keersmaecker & Roets, 2017), older age (Brashier & Schacter, 2020; Lewandowsky et al., 2012), and working memory capacity (Brydges et al., 2018). The continuing influence effect of misinformation is relatively stable over time and individual differences are also implicated in this stability (McIlhiney et al, 2021).

Cognitive abilities as assessed by IQ tests and working memory are both positively correlated with a misinformation reliance and less revision of opinion after a correction (De keersmaecker & Roets, 2017; Sanderson et al., 2021). Intelligence can be said to be the ability to carry out tasks such as abstract reasoning, grasp similarities and differences, generalise, and understand when context affects generalisations, within this definition emotional intelligence could be said to be an intelligence with these abilities as they specifically relate to inter and intrapersonal behaviours and abilities (Mayer et al., 2016). As Weschler (1943) explained, identical IQ scores as measured by cognitive testing may be given by very different individuals as the test is based on a portion of their capacities and experiences. Higher emotional intelligence, which is usually correlated with higher educational attainment, has been shown to correlate with higher levels of fake news detection (Preston et al., 2021). However, heightened emotions and emotional processing i.e., the reliance on emotions rather than the use of reasoning has an increased belief in fake news (Martel et al., 2020). After exposure to misinformation, several influences work in concert contributing to false beliefs, these include cognition, familiarity, and emotions. The emotional aspects of the effects of

misinformation include the person's emotional state, the emotional and emotive content of the misinformation (Ecker et al., 2022), for example, depressive symptoms are a risk factor for belief in misinformation (Dalmastro & Paciello, 2022). It is more likely when browsing online to learn about acts that breach moral norms, this can trigger moral outrage and heightened emotions and when online the person can express emotional disapproval in ways that were not historically within societal norms (Crockett, 2017). This has led to a relatively new entry to the dictionary, post-truth, it refers to how emotions and personal biases and beliefs are more influential than objective facts and that misinformation targets the person's heart rather than the brain when influencing opinion (Glăveanu, 2017; Oxford Languages, 2023). Whether the person's emotional intelligence positively mediates these initial emotional reactions and heuristics for the misinformation and the subsequent stability of the revision of opinion is of interest and has not previously been investigated in relation to the continuing influence of misinformation effect.

Self-Esteem, the self-evaluation of ability, and self-efficacy, the expectation of success in a task (Kalat, 2011), are of research interest within the area of misinformation and more broadly in internet use. Within the general social media sphere, a person's self-esteem can be negatively affected by social media usage, specifically when looking at subjectively superior people (Vogel et al., 2014), and lower self-esteem is correlated with celebrity worship (McCutcheon et al., 2021). Self-confidence is a mediating factor to distinguish between facts and misinformation in fiction (Salovich et al., 2021). Lower self-esteem is implicated in higher post-event misinformation effects (Saunders, 2012), this may be due to the links between self-esteem and suggestibility as noted in forensic psychology in eyewitness testimonies, the misinformation effects are seen as more of a social consequence of rating other judgements above your own memory rather than a misinformation effect (Zhang et al., 2022). There appears to be no research to date that specifically looks at this trait and if those who are high in self-esteem are confident enough to change opinion in the face of retracted information.

The initial belief in fake news may be affected by overconfidence in abilities; the person confidentially relies on their heuristics rather than engaging in thoughtful reasoning (Pennycook & Rand, 2021). Although within educational psychology, the mix of the student's self-efficacy about their knowledge and their interest in the topic affects the student's ability to revise knowledge in the face of misconception corrections (Cordova et al., 2014). Similarly, in the face of a new situation, Covid-19, where preconceptions and non-reflective thinking were not appropriate, self-efficacy reduced stress and mediated the effects of being overwhelmed by information seeking (Meyer et al, 2022), self-efficacy during a health crisis was linked with information seeking and belief in governmental messages (Gesser-Edelsburg et al., 2018). Self-efficacy may give the person (when not scrolling at speed) the confidence to revise opinions and deal with new information when it is presented, however, this has not yet been investigated in relation to the continuing influence of misinformation effect.

Rationale

Whilst seeing, believing, and retaining misinformation despite the correction that, for example, Elvis is alive and working as a movie extra whilst hiding from the mafia (Wikipedia, 2022) is probably not going to have an adverse effect for the person or for Elvis! However, if the misinformation relates to, for example, vaccines, defamatory rumours, or climate-change denial there is reason to be concerned, the impact of retained belief and memory of this misinformation can have personal, societal, and global impacts (Lewandowsky et al., 2017). Research on how best to refute misinformation by pre-bunking, debunking, etc. is essential to the ongoing battle to correct misinformation but the media and sources used to debunk misinformation are important to discover where the highest impact can be achieved. Individuality may also play a part in how to convey the retraction of erroneous information, and it is necessary to investigate the individual differences that could be implicated in retaining belief of misinformation. With this knowledge refutation of misinformation with societal impacts can be disseminated via the most effective channels and phrased so that the correction is impactful and memorable to at-risk populations.

Hypothesis

When initial social impressions of a person are formed based on negative information, this negative impression can persist even after the original erroneous information has been corrected.

When a social impression is formed based on false information that is later retracted, individuals are more likely to update their enduring social impressions if they are higher in a) emotional intelligence, b) self-efficacy and c) self-esteem.

In cases where information is presented by one media type and subsequently corrected by a different form of media, there will be an ongoing influence from the first report, but the types of media (social media or traditional media) involved in that initial information and the subsequent retraction will also play a part in the later beliefs and opinions of the correct answer.

Method

Participants

176 participants were recruited to participate, 58 males, 112 females, and 6 non-binary, the mean age was 33.19 years, (SD = 14.08). This cross-sectional study recruited a convenience sample of participants from contacts on social media (WhatsApp, Twitter), engagement with social media groups (Survey exchange on Facebook and Reddit) and respondents from posters with QR codes.

A sample size of +90 is suggested by G*Power for the statistical tests proposed including multiple regression, correlation and McNemar's tests to detect a small effect size (alpha level = 0.05) and for the tests to be sufficiently powered (> 0.80), the specific requirements of multiple regression for a sample of 75-90 participants was also met by the sample size achieved (Faul et al., 2009; Forshaw, 2007).

Measures

The Rosenberg Self-esteem scale

The Rosenberg self-esteem scale (Rosenberg, 1965) was used, and this has been shown to be both reliable and valid for most nationalities (Schmitt & Allik, 2005). The scale comprises of 10 items rated on a four-point Likert scale from strongly agree to strongly disagree, items 3, 5, 8, 9 & 10 are reverse scored. The Cronbach's alpha for this study was 0.90.

The New General Self-efficacy scale

The New General Self-efficacy scale (NGSE) was used to assess the level of participants' self-efficacy (Chen et al., 2001a). The NGSE has been measured for validity against the Shearer self-efficacy scale (SGSE) and has been demonstrated to be a valid measure for self-efficacy, with a high test-retest co-efficient (Chen et al., 2001b). The scale comprises 8 items rated on a five-point Likert scale from strongly disagree to strongly agree, no items are reverse scored. The Cronbach's alpha for this study was 0.92.

Brief Emotional Intelligence scale

Emotional Intelligence was measured using the Brief Emotional Intelligence scale (BEIS-10) (Davies et al., 2010a). The BEIS has content and factorial validity with the longer emotional intelligence scale and has good internal reliability, test-retest is valid over a short time period (Balakrishnan & Saklofske, 2015; Davies et al., 2010b; Durosini et al., 2021). This measure is considered to be sufficient where time is limited or when the scale is part of a longer survey. The scale comprises 10 items rated on a five-point Likert scale from strongly disagree to strongly agree, no items are reverse scored. The Cronbach's alpha for this study was 0.77

Continuing Influence of Misinformation tasks

The participants were presented with paragraphs to read followed by either a Likert scale of their reaction to the person described or a multiple-choice question on the information given in the paragraph, later in the survey, the participant is presented a second time with approximately the same information however on reading this a second time there is either a stated correction or the information is from a different source with stated correction, the Likert scales and multiple-choice questions are repeated in this second iteration. At the end of the survey the participants without any accompanying information recompleted the Likert and multiple-choice questions (please see Appendix B).

The paragraph on "Nathalie" has been used previously to assess the impact of intelligence on the revision of opinion and had validity in that study (De keersmaecker & Roets, 2017). The Likert scale comprised of 4 words to describe 'Nathalie' and 4 words about how the participants felt about 'Nathalie', all 8 responses were on a likert scale 1-7 and all items positive scored, these items were summed together to form a social impression at each time point, the Cronbach's Alpha for this measure was sufficient and full details are in table 2. The news paragraphs used are 2 scenarios plus their retracted/amended versions, extracted from a larger group of paragraphs used to measure the continuing influence effect of misinformation previously (Brydges et al., 2018; McIlhiney et al.,

2021). The 2 scenarios selected were amended for this purpose to include either a social media or traditional media source. Within the survey the social media version was presented first and subsequently corrected by traditional media in one scenario and vice versa in the other. For each of the two paragraphs the participants were asked the same multiple choice question on the key fact at each of the three time points assessed

Design

SPSS version 28.0.1.0 was used for all statistical analyses. Descriptive statistics were prepared for the demographic information and continuous variables.

A one-way repeated measures ANOVA was used to compare the results of the social impressions misinformation task for the three time points to assess if there was a significant change in the responses between each time points that could indicate a continuing influence effect from the initial misinformation.

We used a multiple regression analysis to assess if the three predictor variables of self-esteem, self-efficacy or emotional intelligence were implicated in the enduring social impression as measured by the Nathalie misinformation task at time point 3.

A Cochran's Q test was used to determine if there was a significant change in the non-parametric misinformation tasks (the news articles), between the participant's responses at each of the three time points, like the repeated measures ANOVA above for the parametric social impressions scores. We measured the responses at each time point for those who gave the 'initial information later retracted' i.e., the misinformation and compared to assess if there was an acceptance of the correction and if there was a difference from the correction time point to the later free recall time point.

We conducted McNemar's tests for independence on the responses, for the news article misinformation tasks (traditional Media corrected by social media and social media corrected by

traditional media) to investigate if there was a significant difference between the scenarios. Specifically, the tests only looked at responses from time point 2 with an updated opinion (accepted the retraction) and only those who at time point 3 had reverted again to the initial misinformation despite having accepted the correction at time point 2. We were only interested in participants with the pattern of answers: misinformation, correction, misinformation. We looked to see if there was a significant difference for the groups of interest between the two scenarios at the point of correction (time 2) and the free recall point (time 3) to test if the source of the initial misinformation and the source of the correction affects the memory or belief in the retraction i.e., does the source of the information/retraction give rise to a difference in answers.

Procedures

The study was approved by the National College of Ireland Ethics Filter Committee on 19th October 2022. The anonymous survey was created with Microsoft forms, no identifiable personal information was collected. Participants completed the participant information and consent form (Appendix A), a survey which included demographic information, reading, and answering questions on six short paragraphs, and completing the psychological measure for three independent variables (emotional intelligence, self-efficacy, and self-esteem) (Appendix B). On completion of the survey, the participant received a debrief sheet (Appendix C). Microsoft forms reported the average time taken by participants to complete the survey was 13.38 minutes. The collated anonymous responses are stored on the National College of Ireland cloud server.

Results

Descriptive Statistics

Descriptive statistics for the demographic and continuous variables within the study are presented below. Table 1 below gives details of the frequencies of categorical data within the study including the frequencies for the movement between the answers for the Media misinformation task.

Table 1

Frequencies of demographic and other variables (N = 176)

Variable	Frequency	%
Gender		
Male	58	33.0%
Female	112	63.6%
Non-Binary	6	3.4%
Highest level of Education		
Leaving Certificate or equivalent	41	23.3%
Undergraduate degree or equivalent	85	48.3%
Postgraduate qualification	50	28.4%
Types of news sources accessed each week		
Broadsheet newspapers (Online or physical versions)	86	48.9%
Tabloid Newspapers (online or physical versions)	42	23.3%
Regulated broadcast media (TV, Radio etc..)	94	53.4%
Social media	144	81.8%
General Internet searches, YouTube, podcasts	127	72.2%
None of the above	1	00.6%
Fire Scenario – traditional media corrected by social media		

Variable	Frequency	%
Participants who responded with the initial information at T1, T2 & T3	27	15.3%
Participants who updated their opinion after the retraction (T2) but went back to the misinformation at T3	48	27.3%
Participants who updated their opinion after the retraction (T2) and retained that revised opinion at T3	56	31.8%
Participants who did not accept information given at T1	41	23.3%
Other variations including 1 missing response	4	2.3%
Night Out Scenario – social media corrected by traditional media		
Participants who responded with the initial information at T1, T2 & T3	19	10.8%
Participants who updated their opinion after the retraction (T2) but went back to the misinformation at T3	19	10.8%
Participants who updated their opinion after the retraction (T2) and retained that revised opinion at T3	106	60.2%
Participants who did not accept information given at T1	32	18.2%
Other variations including missing responses	0	0.0%

Note: T1 = initial information including misinformation later retracted. T2: Misinformation is explicitly retracted, and no other specific cause is given in lieu. T3: recall question, no information presented.

The descriptive statistics for the continuous variables are set out in Table 2 below, included in this is the results from the Likert questions for the three timepoints measured in the social impressions misinformation task. The participants were also asked how much they trusted and believed the report after the presentation of information in each of the news reports and this is also included here.

Table 2

Descriptive statistics of the continuous variables

Variable	Mean (95% Confidence Intervals)	Standard Deviation	Range	Cronbach's Alpha
Age	33.19 (31.07-35.32)	14.08	71 (18-89)	

Variable	Mean (95% Confidence Intervals)	Standard Deviation	Range	Cronbach's Alpha
Number of news sources in a week	2.80 (2.62-2.97)	1.16	5 (0-5)	
Self-efficacy	29.07 (28.20-29.94)	5.86	32 (8-40)	.92
Self-esteem	27.13 (26.31-27.95)	5.54	28 (12-40)	.90
Emotional Intelligence	36.90 (36.13-37.67)	5.16	26 (24-50)	.77
Misinformation Task – Social Impressions				
Opinion of Nathalie at Time 1	25.78 (24.52-27.05)	8.52	48 (8-56)	.88
Opinion of Nathalie at Time 2	43.30 (42.25-44.34)	7.01	48 (8-56)	.94
Opinion of Nathalie at Time 3	38.97 (37.69-40.26)	8.63	47 (9-56)	.95
Misinformation Task – News Reports, trust & belief in the reports				
Fire, Time 1, Traditional Media Report	7.63 (7.40-7.86)	1.48	8 (2-10)	.81
Fire, Time 2, Social media correction	5.46 (5.18-5.74)	1.88	8 (2-10)	.89
Night out, Time 1, Social Media Report	6.59 (6.32-6.85)	1.77	8 (2-10)	.86
Night out, Time 2, Trad. Media Correction	7.74 (7.51-7.96)	1.50	8 (2-10)	.86

Note: Time 1 is after the presentation of the initial misinformation, time 2 is when that misinformation is explicitly corrected, and time 3 is later in the survey with no information offered, a free recall question.

Prior to the completion of inferential tests, a correlational analysis was completed for the variables of interest (Table 3), several significant correlations were found in the dataset, including significant moderate positive correlations between the measures of individual difference, self-efficacy, self-esteem, and emotional intelligence.

Table 3

Correlation table between variables of interest within the social impression misinformation task.

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Self-efficacy	1							
2. Self-Esteem	.49***	1						

3. Emotional Intelligence	.51***	.45***	1					
4. Nathalie score – T1	-.04	-.02	.05	1				
5. Nathalie score – T2	.09	.15	.21**	.13	1			
6. Nathalie score – T3	-.01	.16*	.22**	.16*	.57***	1		
7. Age	.04	.22**	-.03	-.09	-.04	.09	1	
8. Gender	.09	-.08	.11	.03	.11	-.04	-.15	1
9. News Sources	-.06	-.02	-.04	-.19*	-.05	.07	.20**	.04

Note: *** $p < .001$, ** $p < .01$, * $p < .05$, (two-tailed). T = time point. Time-point 1 = presentation of initial information including misinformation, Time-point 2 = representation of information and retraction of misinformation, Time-point 3 = free recall, no information presented.

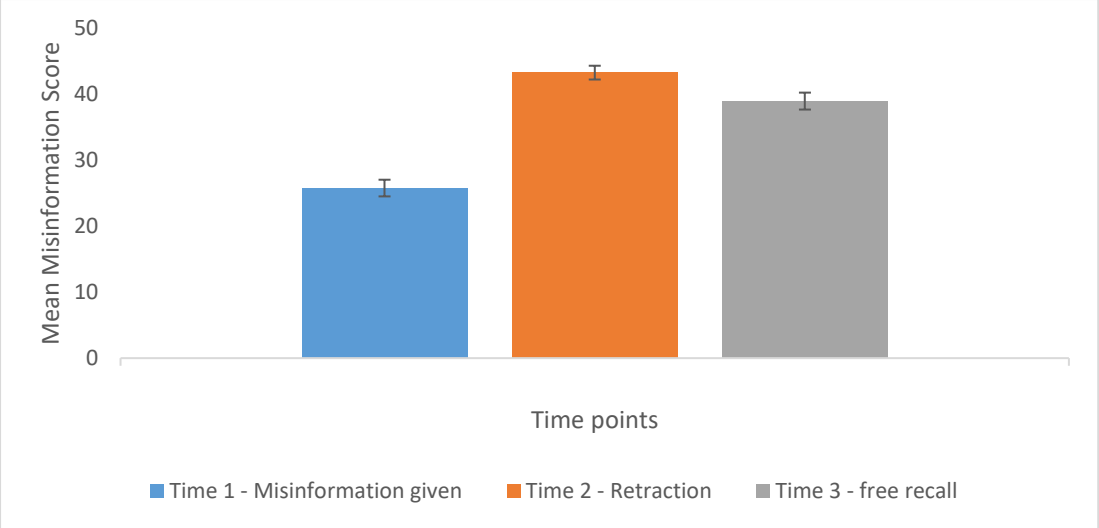
Inferential Statistics

Hypothesis 1

A one-way repeated measures ANOVA was conducted to compare the scores on the three Nathalie Impression scales at time 1 – misinformation presented, time 2 – retraction and correction of misinformation and time 3 – free recall, some time has elapsed. There was a significant difference between the three timepoints, Wilks' Lambda = 0.26, F (2, 174) = 252.27, $p < .001$. Effect size analysis using multivariate partial eta squared (.74) indicated an extremely large change over time. Results of the Bonferroni post-hoc analysis indicated a significant increase ($p < .001$) from T1 (M = 25.78, SD = 8.52) to T2 (M = 43.30, SD = 7.01), also a significant increase ($p < .001$) from T1 to T3 (M = 38.97, SD = 8.63) but a significant decrease ($p < .001$) from T2 to T3.

Figure 1

Mean Score on Social Impression misinformation task (Nathalie) at each time point



Note: Error bars are indicative of 95% confidence intervals.

Hypothesis 2

A multiple regression analysis was performed to determine if the time 3 Social impression score could be explained by the five variables: gender, age, self-esteem, self-efficacy, and emotional intelligence. Preliminary analyses were conducted to ensure no violation of normality, linearity, and homoscedasticity assumptions. The correlations between the study's predictor and criterion variables were examined (contained within Table 3). Two of the five predictor variables were significantly correlated with the criterion variable and these significant effects were self-esteem (p = .021) and Emotional intelligence (p = .002). The correlations between the predictor variables were also assessed with r values ranging from -.12 to .51. The results indicate that there was no violation of the assumption of multicollinearity and that the data was suitable for examination through multiple regression analysis. Since no *a priori* hypothesis had been made to determine the order of entry of the predictor variables, a direct method was used for the analysis. The five predictor variables explained 8.4% of the variance in time 3 opinion levels (F (5, 159) = 2.93, p = .015). Two of the variables were found to uniquely predict time 3 opinion levels to a statistically significant level:

Self-Efficacy (β = -.19, *p* = .040) and emotional intelligence (β = .27, *p* = .003) (see Table 4 for full details).

Table 4

Influence of the predictor variables of age, gender, self-efficacy, self-esteem, and emotional intelligence on the Social Impression misinformation task at time 3, free recall.

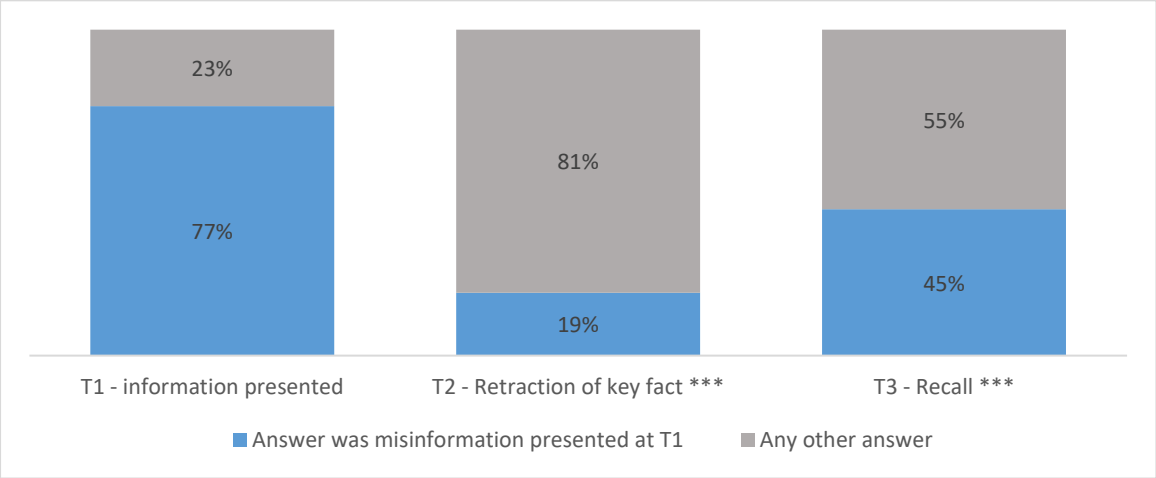
Variable	R^2	B	SE	β	*t*	*p*
Model	.08					.015
Gender		-.35	1.41	-.02	-.25	.801
Age		.04	.05	.07	.91	.364
Self-Esteem		.18	.14	.11	1.22	.225
Self-efficacy		-.28	.14	-.19	-2.07	.040
Emotional Intelligence		.45	.15	.27	2.97	.003

Hypothesis 3

Related samples Cochran's *Q* tests were completed as non-parametric tests to look at the possible significance of the changes in answers from the news report scenarios (Fire and Night out). Cochran's Q tests determined that there was a statistically significant difference between the proportions of respondents who gave the initial misinformation (i.e. Arson or drink spiking) over the three time points in each scenario, Social media scenario corrected by traditional media (fire, n = 175, $X^2(2) = 137.16$, $p < .001$) and also Traditional media corrected by social media (night out, n = 176 $X^2(2) = 204.67$, $p < .001$). Within the two results, all pairwise comparisons of the time points were significantly different ($p < .001$) except for social media corrected by Traditional media (night out) for T2 to T3, this was a non-significant result ($p = .197$). (See figures 2 & 3 for graphical representations).

Figure 2

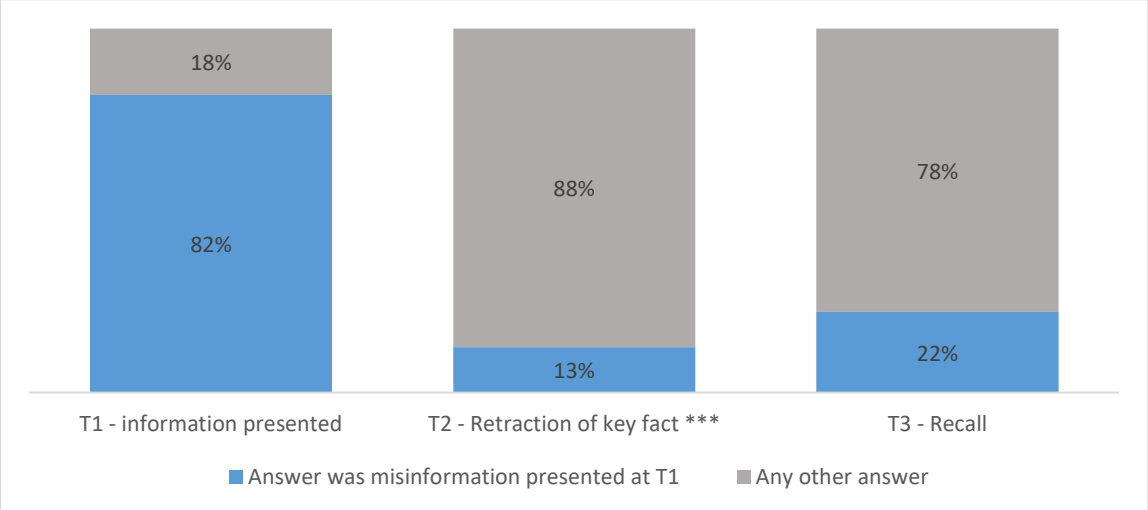
Percentage of respondents who at each timepoint responded with the information that was initially presented but later retracted for Traditional media news report retracted by social media misinformation task.



Note: change in responses from T1 to T2 and from T2 to T3: $P < .001$

Figure 3

Percentage of respondents who at each timepoint responded with the information that was initially presented but later retracted for social media news report retracted by traditional media misinformation task.



Note: change in responses from T1 to T2 $P < .001$ and from T2 to T3: $P = .197$

McNemar's tests for independence were completed based on the non-parametric information gathered for the news reports misinformation task. Participants initially read a traditional media report corrected by social media, the test was repeated but this time it was social media corrected by traditional media. McNemar's test compared the change between the two types of media report/retraction of the levels of a) updating of opinion at time 2 (accepting the correction) and b) for those that did update opinions at time 2 but subsequently reverted to the original now retracted information at time 3.

The results indicate significant differences between the responses given in each scenario at time 2 for those who revised their opinion and time 3 for those who retained that updated opinion, media attribution was the difference between both scenarios (Table 5)

Table 5

McNemar's test result summary of the comparison of T2 and T3 results for the news reports misinformation tasks.

Variable	*N*	*χ2*	*P*
Repeated Measures: Media Source Change			
Comparison of fire and night-out scenarios between Time point 2 participants who updated their opinion	114	5.04	.023
Comparison of fire and night-out scenarios of the Time point 3 participants who updated their opinion at T2 but reverted at T3	87	19.31	<.001

Note: T2 = time point 2, response after correction paragraph is read. T3: time point 3, free recall question completed at the end of the survey.

Discussion

Our study looked at how people's opinions change when they are presented with material containing a key piece of information that is later retracted, and specifically whether the original information lingered in memory affecting future opinions or the correctness of factual answers. It was of interest if the individual differences of emotional intelligence, self-efficacy and self-esteem influenced the final score for social impressions of a fictitious individual and if the media sources of the original and corrected information influenced the change in the answers given after the retraction and after time passed.

In line with the first hypothesis, the initial erroneous negative information about the fictitious person had an ongoing effect, the social impression result improved after the retraction of the negative information but at the end of the survey when the opinion was re-queried with no information available to the participants, the social impression score had significantly decreased from the correction time, this demonstrates that the initial negative information lingered in memory and influenced the ongoing memory and opinion of the person.

We expected in research question two, based on De keersmaecker & Roets (2017) work in this area, that emotional intelligence as a subset of general cognitive abilities would help mitigate against the ongoing influence of the initial misinformation. Self-efficacy and self-esteem have not been specifically studied for their relationship to misinformation and its ongoing effects, we hypothesised that they would give the person the confidence to adjust opinions when they are known to be erroneous. The model explained 8.4% of the social impression score, with significant results for self-efficacy and emotional intelligence. In line with the hypothesis, higher emotional intelligence predicted a higher social impression score. However, against expectations, higher self-efficacy was negatively associated with the social impression score meaning that higher self-efficacy was more likely to predict a lower social impression score after correction. Self-esteem was not

significantly implicated in these results despite the correlation with both emotional intelligence and self-efficacy.

In line with our expectations for hypothesis three, there was an ongoing influence from initial information which was later corrected in the responses received and the model showed significant differences at each time point, however detailed analysis revealed that for social media corrected by traditional media whilst there was a numeric return to the initial misinformation at timepoint three, this was not a significant reversion. We subsequently delved into the individual responses to track through for each form of media information/retraction scenario the respondents who accepted the initial information presented, who subsequently updated their opinion after the correction but then reverted to the original misinformation (excluding other participants), the pattern of answers was misinformation, correction, misinformation. There were significant differences between both scenarios at both time points two and three for these groups, at both time points, the traditional media (in our case a broadsheet newspaper), was influential on the change of opinion and reduced the slippage back to a misinformation belief. Within this survey the mean number of news sources accessed in a week was 2.8, the number of media sources had a small correlation with age, with a majority of people accessing news via social media or the internet as well as other sources each week. The trust and belief in traditional media was higher than the trust and belief in social media for both scenarios, irrespective of whether it was the original information or the retraction.

Prior research has looked at the continuing influence of misinformation by presenting misinformation and retraction, with a control group who only see the retraction information at both time points (De keersmaecker & Roets, 2017; Szumowsska et al., 2020) or alternatively presenting information with a retraction/control and assessing the continuing influence after a distraction task (Brydges et al., 2018; Sanderson et al., 2021) and again after four weeks (McIlhiney et al., 2021). We looked at the opinions on the information at the time of presentation and after the retraction with

the information available to the participant above the questions and then after about 5-10 minutes with no information available. The evidence to date is that with controls (De keersmaecker & Roets, 2017; Szumowsska et al., 2020), the influence of the misinformation is evident after retraction and influences the answer compared to the control, in our study within the news misinformation tasks 11%-15% of respondents stayed with the original information despite retraction at all three time-points. For all three misinformation tasks there could be seen a move back towards the misinformation after an initial acceptance of the correction, this change in opinion was a significant change that favoured the misinformation however this movement back towards the misinformation was not significant when traditional media presented the retraction. This would (except for traditional media correction) confirm the previous research in this area into belief regression (Swire-Thompson et al., 2023) and that it can happen within a shorter period than previously tested with a proviso that the source may impact this effect.

The information provided in all three misinformation tasks was such that participants should not have had any heuristics or illusory truth effect from seeing the information before that would have influenced their answers and retention of facts (Pennycook et al., 2018). This would imply that for the differences between the two news tasks, the deciding factor was the media source that was attributed to the original information and the retraction. Previous research during the recent pandemic suggested that older people rejected conspiracy beliefs and accepted health protective behaviours due to their use of traditional media and less usage of social media (Allington et al., 2021), the frequencies, means and inferential statistics from this research would agree that traditional media is the source that people are more likely to trust and retain as the correct information but this may not necessarily be just factor of age or not using social media but a factor of a hierarchy of media trust that if the traditional sources are accessed by any age it may be the one that is ultimately retained as knowledge. As the information in this study did not lend itself to being decided on by heuristics other than the news source, this seems to have been the heuristic used in the absence of any other prior information (Walter & Tukachinsky, 2020), but there may have been a

different result if the information was ideologically incongruent with beliefs (van der Linden et al., 2021). The trust and belief scores for the type of media and the results of the misinformation tasks would confirm that it is source and in this case, the source can be a type of media instead of a subject matter expert as the trusted source (Ecker & Antonio, 2021).

Within the first misinformation task, no sources were given to rely on, the information was clearly retracted as being incorrect very shortly after the initial misinformation and the correct information was repeated, this would be in line with good practice for debunking (Lewandowsky, et al., 2020), the correction also brought the information back to a generally accepted worldview of nurses generally being caring and good (Lewandowsky et al., 2017). Misinformation/information that goes viral often provokes an emotional response and this emotionality can override the source's credibility when a correction is needed (Ecker et al., 2022), in this misinformation task, with no source given, but with potential outrage and a move away from societal expected norms in the social impressions misinformation - a drug stealing nurse (Crockett, 2017) emotional intelligence was implicated as a small but significant part of the respondents being able to take on board the correction and retain the revised information about the case study they had read. It has been previously shown that ideological and emotional issues are difficult to correct when opinion is influenced by fake news i.e. belief or not in a politician does not necessarily influence voting intentions, vaccine misinformation sways health behaviours, and propaganda influences civic unrest (Lewandowsky & van der Linden, 2021), however when emotional intelligence, in particular, is looked at in relation to fake news it is seen that individuals who are higher in emotional intelligence can see through the emotional wrapping around the basic fake news facts and are less likely to believe them (Preston et al., 2021) our research would demonstrate that this ability also allows a person to update their social impressions of an individual when presented with corrected information.

Self-efficacy was negatively implicated in the final social impression score i.e., a person higher in self-efficacy was likely to have a lower opinion or reverted to a lower opinion at the third time point. It has been shown for fake news that overconfidence leaves a susceptibility to speedy assessments and lack of reflective thinking, and this increases the belief in fake news (Pennycook & Rand, 2021) possibly this overconfidence and speedy decision-making also applies to a situation where with no other basis for an opinion the self-efficacious person makes up their mind on the first information and holds on to that opinion. This runs contrary to the evidence within educational psychology which would hold that the most efficacious students will revise their opinion in the face of updated information (Cordova et al., 2014).

Interestingly whilst self-esteem, which was moderately correlated with the other two measures in this study was not a significant component of whether the person updated their opinion, possibly some of the differences within the self-esteem trait, such as suggestibility, sensitivity to misinformation, memory distrust and self-confidence (Saunders, 2012; Zhang et al., 2022) may have negated any effect. Self-esteem has been linked with suggestibility and if a person low in self-esteem is presented with information followed by implied/leading information afterwards that post-event misinformation effect will be seen in those low in self-esteem, this is not seen as a memory issue but a sensitivity to post-event suggestion (Saunders, 2012). Self-esteem issues can be influenced by social opinions and pleasing, there was no social cues or other people's opinions (Zhang et al., 2022) within the social impressions task to lead or mislead towards the misinformation. The correlational analysis of all of the descriptive information does show a small correlation with the final social misinformation score but the multiple regression of the key predictor variables with the score doesn't have self-esteem as a significant influence on the final score.

Future research

It is suggested that further investigations into the continuing influence of misinformation include additional case studies to assess if positive fact retraction has similar results to negative fact

retraction. The specific individual differences investigated within this study either had small but significant effects or no significant effect, given the importance within the health and political fields of debunking misinformation further investigations into personal differences that may affect ongoing belief in erroneous information are of importance including investigations into efficacious targeted messaging for those most at risk from continued belief in misinformation. The media misinformation task did not give a clear alternative opinion when the misinformation was retracted, reliance on the misinformation may be reduced if the participant can replace the misinformation with new specific information, future research should look to see if this is relevant, in everyday life there is not always a clear replacement, but it is important to know if this is part of the issue.

Limitations

Given the limitation of the sample size achievable, a control group was not utilised, this was a limitation in that prior research has found there is a continuing influence effect of misinformation even at the point of retraction/correction that we were unable to assess. Given the nature of the study, it was not possible to extend the time gaps, it limited the effect of measuring the ongoing influence when the timespan was circa 5-10 minutes. The link to the specific individual differences of emotional intelligence and self-efficacy, though significant, was small and replication is needed to confirm this finding. The correction of the social misinformation case study of a nurse stealing may have tied into a world view of nurses being good and the link with emotional intelligence should be further investigated in case an ideological view of nurses was implicated in the results.

Conclusion

This cross-sectional opportunistic study into some of the potential influences that lead to the retention of belief in original information despite later corrections or retractions found that emotional intelligence is an influence on the ability to update social impressions of an individual when the initial information is later discovered to be incorrect. Conversely, self-efficacy was seen to be an indicator in this study of a participant whose social opinion is still influenced by the original

information, i.e., they stay closer to the original opinion despite newer information being proffered. Self-esteem was not seen to have an influence on the final opinion. When a media source is included for both the original information and the correction/retraction, participants were influenced by the source and were more likely to change their opinion and retain the new opinion when it was a traditional media source rather than a social media source. Participants completed three misinformation tasks and in all three tasks the initial information was generally accepted, the presentation of a retraction resulted in a significant swing towards the new information. Later when a final opinion was sought, all three tasks in absolute numbers moved back towards the initial misinformation, this change as an indicator of the influence of the original misinformation was significant in the cases of the social impression task and when traditional media was corrected by social media but did not achieve significance in the case of social media being corrected by traditional media.

The study reiterates the findings of other research in this field that misinformation lingers and will have an influence on future opinions and beliefs even if there appears to be an initial acceptance of the correction. The source of the correction is known to be of importance and to mitigate influence of the initial misinformation, in this study when the source of the correction was regulated broadsheet media the correction was more effective. When correcting misinformation with far-reaching implications such as health or climate change, regulated media appears more effective, and it is important that it is seen and heard from as much as social media. The aspects of personality such as emotional intelligence and self-efficacy should be further investigated to ensure that corrections are presented in the manner most likely to be accepted and retained as opinion or belief.

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Appendix A

Participant Information and Consent form

Participant information and Consent

What is the study about?

You are invited to participate in a research study carried out as part of a Psychology final year project with the National College of Ireland about the individual differences which may affect whether a person remembers the correction of misinformation or the original information. This project is being supervised by Professor Fearghal O'Brien of the National College of Ireland.

Before you decide to take part, please read the participant information and consent to take part. Should you have any further queries please contact us on the email addresses at the bottom of this page.

Why have I been invited to take part?

This is an anonymous internet/online survey and is open to all adult (over 18) recipients of the link.

Do I have to take part?

Participation in this study is voluntary, if you decide to take part you will be free to withdraw at any time without reason. You can exit the survey at any time by exiting the browser. Your informed consent will be needed before taking part in the study. Should you have any questions before you participate, please email the contact emails at the bottom of this page.

What will I be required to do?

The research involves reading approx. 10 short paragraphs and answering a few questions on each. There are some non-identifying demographic information and 3 short surveys on the specific personality aspects that are being measured. It is estimated that the survey will in total take approx. 7-12 minutes to complete.

Are there any risks associated with taking part?

There should be no risks with taking part, you will be expected to read some short news articles, if any of these articles resonate with you or cause distress due to personal life experiences of the type of incident reported on, contact details for support organisations will be listed in the debrief sheet at the end.

Are there any benefits associated with taking part?

It is hoped that studies of this nature will add to the information available to policy makers & media outlets so that the correction of erroneous information can be more effective or targeted in the future.

What information about me will be collected?

We will not collect or process any personal data nor IP addresses. All data you provide will be anonymous, which means that no-one could using reasonable means identify you from the data. As your data is anonymous it cannot be withdrawn after submission at the end of the survey. The anonymous data will be stored on the NCI one drive cloud system, it will be destroyed after 5 years.

What will happen to the results of the study?

The results of this study are expected to be presented as part of a dissertation submitted to National College of Ireland. There is the possibility that these results could also be presented at conferences or published in an academic journal.

Can I withdraw from this study?

You maintain the right to withdraw from the study at any stage up to the point of data submission. At this point your data will be included with that of other participants and as such can no longer be retracted.

Ethical Approval:

This study has obtained ethical approval from the National College of Irelands Ethics committee on 19th October 2022.

If you have any queries, you can contact myself or my supervisor at the email addresses below. Many thanks for reading this information and thanks also should you decide to participate.

Kind Regards

_____

Jane Walsh

Email: x19136421@student.ncirl.ie

Kind Regards

_____

Dr Fearghal O'Brien

fearghal.obrien@ncirl.ie

Participant Consent:

In agreeing to participate in this research I understand the following:

- The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.
- If I have any concerns about participation, I understand that I may refuse to participate or withdraw at any stage by exiting my browser.
- I understand that once my participation has ended, that I cannot withdraw my data as it will be fully anonymised.
- I have been informed as to the general nature of the study and agree voluntarily to participate.
- All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business.
- I understand that my data will be retained and managed in accordance with the NCI data retention policy, and that my anonymised data may be archived on an online data repository and may be used for secondary data analysis. No participants data will be identifiable at any point.
- At the conclusion of my participation, any questions or concerns I have will be fully addressed

I have read and agree with all of the above information

☐ I agree

I am providing informed consent to participate in this study based on the information above

☐ I agree

Appendix B

Survey

To which gender identity do you most identify?		
	Man	
	Woman	
	Non-binary	

What age are you in years?	

What is your highest level of education achieved?	
Leaving certificate or equivalent	
Undergraduate degree or equivalent	
Postgraduate qualification	

Please read the article below from a recent report on Nurses in an Irish Hospital:

The women in the picture is Nathalie. She is 31 years old and has been married with Chris for four years. They have a three year old son together, named Brian. After high school, Nathalie went to college to study nursing. During her time at college, Nathalie also worked as a waitress in a bar called 'The beer house'. It is in this particular bar that she met her husband Chris. After graduation, Nathalie started to work as a nurse at the local hospital. The doctors and the patients are very satisfied with her work. She is also very popular among the other nurses and often invites them to come over for dinner.
Two months ago Nathalie was arrested for stealing drugs from the hospital. Apparently, she has been stealing for over 2 years and selling the drugs on the street, making money to buy designer clothes.

How accurate do you think these specific words are in describing Nathalie:

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Sincere							
Respectful							
Intelligent							
Trustworthy							

When I think of Nathalie I feel

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Positive							
Warm							
Friendly							
Favourable							

News Sources: How much of your information about news, current affairs and generally what is going on in the world comes from the following sources

	None	Some	About half	most	All
Traditional Media – newspapers, TV, Radio					
Social Media – Twitter, TikTok, Facebook etc..					

Which of the following do you check/watch/listen to/ read at least once per week? Please select all that apply:

Broadsheet Newspapers – paper or online versions	
Tabloid Newspapers – paper or online versions	
Regulated Broadcast media, RTE, BBC, Sky News etc..	
Social Media	
General Internet search for news or information including google, YouTube or podcasts	

There was an error in the article first presented, information that was not related to Nathalie was added in error, please read the correct information below, and answer the questions about Nathalie:

The women in the picture is Nathalie. She is 31 years old and has been married with Chris for four years. They have a three year old son together, named Brian. After high school, Nathalie went to college to study nursing. During her time at college, Nathalie also worked as a waitress in a bar called 'The beer house'. It is in this particular bar that she met her husband Chris. After graduation, Nathalie started to work as a nurse at the local hospital. The doctors and the patients are very satisfied with her work. She is also very popular among the other nurses and often invites them to come over for dinner.

Please rank how accurate you think the words below are in describing Nathalie:

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Sincere							
Respectful							
Intelligent							
Trustworthy							

When I think of Nathalie I feel:

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Positive							
Warm							
Friendly							
Favourable							

The news articles you are about the read come from the following fictional media sources:

Independent Times, a newspaper, a broadsheet of repute that is regulated by the National News Commissioner, it is available in all newsagents, supermarkets and has an online subscription version.

or

∞ **Inst-toc-Gram** ∞, social media platform, currently has the most hits/page impressions of 2022, like most social media platforms user like and retweet info that they want to share or have their followers see. Casey Haas is an avid user, who is interested in the latest news and update their followers regularly with news they have seen and think everyone else should see too.

.

News Report 1

Irish Independent Times

November 2025

Australia: 50,000 Hectares Burn

Firemen still working

Firefighters in rural Victoria have been battling a bushfire that raged out of control in the state's North overnight. The bushfire came dangerously close to homes in the town of Euroa, but it is believed that no damage was caused to property. David Karle of the Country Fire Authority (CFA) indicated that authorities were looking into the cause of the fire, with initial evidence suggesting that the fire had been deliberately lit. Emergency services were still working tirelessly this morning to extinguish the flames, but were confident that the fire was unlikely to pose any further threat to local communities. The suspected burn area is estimated to be roughly 50,000 hectares.

What do you think was the main cause of the fire?

Accident	
Extreme Heat	
Arson	
Lightening	

How much do you trust or believe this report?

	Not at all	**Not much**	**Neutral**	**Somewhat**	**Totally**
Trust					
Believe					

∞ Inst-toc-Gram ∞

Casey Haas

After working throughout the day, firefighters have managed to bring a bushfire in near me under control, THANK GOD!! There are no reported casualties or damage to property. After further investigation, authorities believe the fire has not been caused by arson. I got to speak to the media, RTE!!! This is the report “Eoroa resident Casey Haas expressed her relief that no one had been harmed by the fire, and said she felt lucky that they had avoided disaster. Even so, she appealed to residents of the community to work together to ensure they were prepared for disaster if it ever struck again”.

#famous #koalas #bushfire #accidentshappen

What do you think was the main cause of the fire?

Accident	
Extreme Heat	
Arson	
Lightening	

How much do you trust or believe this report?

	Not at all	**Not much**	**Neutral**	**Somewhat**	**Totally**
Trust					
Believe					

∞ Inst-toc-Gram ∞

Casey Haas

∝ Reshare ∝

A 21-year-old woman has been taken to St. Mary's hospital after losing consciousness whilst out partying at the Cable nightclub in London in the early hours of the morning. A friend of the woman said she had complained of hallucinations and nausea not long before falling unconscious. The woman's blood pressure and heart rate have stabilized and doctors believe the woman's symptoms were the result of her drink getting spiked. A recent series of drink-spiking incidents at local nightclubs has led to renewed calls for the introduction of a bottled-drinks-only policy. The incident comes as a reminder to party-goers to be careful with their drinks and always stay with friends.

What do you think was the cause of the woman's collapse?

Dehydration	
Drink spiking	
Alcohol	
Medical Condition	

How much do you trust or believe this report:

	Not at all	**Not much**	**Neutral**	**Somewhat**	**Totally**
Trust					
Believe					

Irish Independent Times

November 2025

London Nightclub incident.

Woman recovering well.

A woman who fell unconscious while partying at a London nightclub has remained in hospital. The woman was out celebrating with friends after graduating from the Regent Fashion Academy when she collapsed and required medical attention. Hospital doctors have now ruled out drink-spiking as the cause of her symptoms. Further tests were being conducted, but the woman was due to be released from hospital later today. The woman's brother stated the family was relieved that she was recovering well, and praised her friends, saying it was their timely aid that saved her from further harm. The woman herself has no memory of the incident.

What do you think was the cause of the woman's collapse?

Dehydration	
Drink spiking	
Alcohol	
Medical Condition	

How much do you trust or believe this report?

	Not at all	**Not much**	**Neutral**	**Somewhat**	**Totally**
Trust					
Believe					

Some quick questions about you, please select how much you agree with each one:

	Strongly Agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly Disagree**
I will be able to achieve most of the goals that I have set for myself					
When facing difficult tasks, I am certain that I will accomplish them					
In general, I think that I can obtain outcomes that are important to me					
I believe I can succeed at most any endeavour to which I set my mind					
I will be able to successfully overcome many challenges					
I am confident that I can perform effectively on many different tasks					
Compared to other people, I can do most tasks very well					
Even when things are tough, I can perform quite well					

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
I feel I am a person of worth, at least on an equal basis with others				
I feel that I have a number of good qualities				
All in all, I am inclined to think I am a failure				
I am able to do things as well as most other people				
I feel I do not have much to be proud of				
I take a positive attitude towards myself				
On the whole, I am satisfied with myself				
I wish I could have more respect for myself				
I certainly feel useless at times				
At times I think I am no good at all				

	Strongly Agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly Disagree**
I know why my emotions change					
I easily recognise my emotions as I experience them					
I can tell how people are feeling by listening to the tone of their voice					
By looking at their facial expressions I recognise the emotions people are experiencing					
I seek out activities that make me happy					

I have control over my emotions					
I arrange events others enjoy					
I help others when they are down					
When I am in a positive mood, I am able to come up with new ideas					
I use good moods to help myself keep trying in the face of obstacles.					

Thinking back to Nathalie, please rank how accurate you think the words below are in describing Nathalie.

Please rank how accurate you think the words below are to describe Nurse Nathalie:

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Sincere							
Respectful							
Intelligent							
Trustworthy							

When I think of Nathalie I feel

	Completely Disagree	disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Completely Agree
	1	2	3	4	5	6	7
Positive							
Warm							
Friendly							
Favourable							

What do you think was the main cause of the fire?

Accident	
Extreme Heat	
Arson	
Lightening	

What do you think was the cause of the woman's collapse?

Dehydration	
Drink spiking	
Alcohol	
Medical Condition	

Submit

Appendix C

Debriefing document

Debrief

Thank you for participation in this research study, your contribution is valuable and much appreciated.

Please note that all news articles and personal information provided in the news articles during your survey were fiction, they were created to test if the first information a person reads remains in their memory even when that information is corrected and if certain individual differences influence which information is retained.

As outlined in the participant information section, the information you have just provided will be stored in an anonymous form on the NCI OneDrive. The data may be used in this anonymous non-identifiable form for further research in this area until its destruction under NCI policies. It is not possible to remove your data as it is completely anonymous and is merged with the other anonymous submissions to this survey.

If you have been affected by events similar to the fictional ones in this study and wish to seek support, you should contact support agencies, possible services to contact could include: Crime Victims Helpline Freephone: 116 006 Where else can I get support? - Garda

If you have any concerns or would like to view a summary of the results when completed, please contact the supervisor detailed below.

With thanks

Kind Regards

_____

Jane Walsh

Email: x19136421@student.ncirl.ie

Kind Regards

_____

Fearghal O'Brien

fearghal.obrien@ncirl.ie