



Research article

People lie less when they put on a medical face mask

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ABSTRACT

The current study examined how a face mask people wore during the COVID-19 pandemic affects frequent lying and successful telling and detecting lies and truths in a face-to-face deception task. Participants were psychology students who acted as senders and receivers of true and false communications under three conditions: visible face, wearing a face mask, and blindfolding in addition to the face mask. Participants arrived in groups of eight. They first completed a lying questionnaire and then participated in the deception task. Their goal was to outperform the rest of the group to retain a bonus of additional course credit. Results indicated that participants reduced the number of lies told when wearing the face mask compared to chance expectancy ($d = -.27$) and visible face ($d = -0.21$).

In addition, participants were more successful in detecting truths in the face mask condition than in the visible face condition ($d = 0.21$). Finally, self-assessed lie-telling ability predicted frequent lying in the face mask but not in the other conditions. It was suggested that participants wearing the face mask were affected by the attitudes and norms that prevailed during the COVID-19 pandemic, where consideration was required, and people were relatively thoughtful and kind. The face mask reminded participants of these norms and motivated participants to act accordingly.

1. Introduction

The current study was conducted in Israel at the end of 2021 after the obligation to wear a face mask to protect against the COVID-19 virus was canceled. The study aimed to explore the role of wearing a medical face mask to prevent the spread of the coronavirus (referred to hereafter as the face mask) in reducing (or enhancing) lie and truth frequencies as well as successfully telling and detecting lies and truths. Generally, in a face-to-face deception situation, we are interested in how the face mask affects the dynamics of deception and its successful detection. A recent study addressed the question in the courtroom [1] and concluded that signals of deception are virtually absent in the face. Therefore, it should not matter whether the sender puts on a mask because there is nothing to hide. Vrij and Hartwig [1] suggested that wearing a mask makes receivers more suspicious or trusting. We will take it one step further and ask if wearing a mask affects the sender's lying rate. To this end, we designed a face-to-face deception experiment with participants acting as senders and receivers of true and false messages under three conditions: visible face, wearing a face mask and blindfolding. The three conditions are presented in a within-subject design.

Lying and lie detection dynamics are biased. Therefore, we considered some biases and unsubstantiated beliefs related to lying and lie detection and extracted hypotheses from them.

One bias relates to believing people can detect deception from facial visual cues. The premise rests on the early transference of the

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parent's "ability" to detect lies in their little children by instructing them: "look into my eyes." Indeed, Vrij et al. [2] manipulated the instructions to maintain eye contact with the interviewer during a lie detection experiment. Results showed that placing greater cognitive demands on senders increased the indications of deception and the observer's ability to differentiate between liars and truth-tellers. The eyes receive special attention in lie detection, and gaze aversion is prevalent. A study in 58 countries [3] showed that people across countries believe that liars avert their gaze. However, research failed to support this notion [4].

Furthermore, a meta-analysis that examined lie detection success when receivers focused only on the sender's face indicated that the success rate is at a chance level. Facial behaviors provided no indications of the sender's veracity [5]. These results align with an earlier account [6], indicating that facial expressions are well-controlled and prevent deception cues from leaking. If facial cues are misleading, their concealment should improve lie detection, and the face mask should help.

Vrij and Hartwig [1] provided a list of believed deception cues related to the lower face, for example, smiles, pressed lips, chin raise, and biting lips. The face mask conceals these and other believed deception cues and increases the receiver's attention to other, more reliable, cues. In this case, we expect the face mask to facilitate lie detection compared to a visible face condition. To further examine the hypothesis, we added another condition that blindfolded both senders and receivers and denied them any visual cue. Here, the receiver's attention is directed to a tactile channel as receivers wrap the sender's fist with their hand. If the touchy feel is more sensitive to lies than facial changes, we expect a higher lie detection rate in the blindfolding than in the face mask condition.

In contrast, the face mask may increase senders' confidence in successfully delivering their lies. They, therefore, may increase their lying rate. At the same time, the mask denies receivers from deception cues in the lower part of the senders' face and reduces confidence in their lie detection performance. As a result, receivers may intuitively respond to the sender's ascribed preferences and may increase their disbelieving rate.

In the blindfold condition, senders feel even more secure about delivering lies, and this would further increase their lie-telling rate. Receivers, who are totally denied of visual cues, feel less confident in their lie-detection performance. As they intuitively feel that the sender would tend to benefit from the lack of visual cues and lie more, receivers may increase their disbelieving rate. Frequent lying and disbelieving would result in an increased lie detection success rate, while successful truth detection would decrease. A different view relates to the "illusion of transparency" [7]. The illusion of transparency notes that senders feel their internal state is transparent and leaks to other people. Therefore, senders overestimate the receivers' ability to detect their lies. Blindfolding and, to some extent wearing the face mask deny the sender of feedback from the recipient and might increase the illusion of transparency, leading to fewer lying attempts.

Abeler et al. [8] found frequent truth-telling in a meta-analysis and explained that people are motivated to look truthful, resulting in frequent truth-telling. On the other hand, lying is damaging for moral or religious reasons. Furthermore, it may hurt the self-image, conflict with social norms of honesty, and finally, it takes a toll on challenging the targets' authority. Mazar et al. [9] interpreted the truth-telling preference as an internal reward. Hence, complying with the values of honesty is rewarding. To conclude, acting honestly and frankly is the preferred behavior. While lying is costly and, therefore, less frequent.

Recipients are truth-biased or tend to judge statements as truthful. The truth bias is more robust when interacting with senders rather than observing them [2]. According to the truth bias, receivers in a face-to-face interaction will prefer to believe the sender. Further, receivers may intuitively feel that the sender would prefer to tell the truth and reciprocate by trusting the communication.

According to the truth preference approach, we expect many participants to be biased toward truth-telling in the sender's role and expect participants to reciprocate and trust the communication in the receiver's position. The truth preference bias does not differentiate between the three conditions (visible face, face mask, and blindfolding). Therefore, in all conditions, more truths and frequent believing will unfold.

Turning to success rates, irrespective of experimental conditions, frequent truth-telling and believing would result in an enhanced truth-detection rate at the cost of a lower lie-detection success rate.

Another bias relevant to the present study is people's tendency to reduce deception when reminded of honesty standards. Mazar et al. [9] indicated that reminding people of moral rules is enough to make them behave by these moral standards. Specifically, Mazar et al. [9] asked their participants to recall the ten commandments before the experiment. They found that these participants did not cheat, although they could gain a more significant reward by cheating. In contrast, another experimental group that was asked to indicate the names of ten books they had read in high school cheated on the test. Wearing a face mask reminded participants of the plague, where people helped each other and showed solidarity. With all its hardship, people accepted the restrictions that were imposed on them. Wearing a face mask may remind participants to behave morally and lie less. Therefore, the face mask condition is expected to show a lower rate of lies and more belief on the receiver's part. Consequently, the success rate of detecting truthful messages will increase.

Finally, people believe they are average lie-tellers and adequate lie detectors. These biases are related to truth preference biases because people believe in their morality and are motivated to sustain this self-concept. Following the honest self-concept, people tend to develop a biased belief that they are not very persuasive lie-tellers and rate their lie-telling ability the same as the average rating [10]. In the previous accounts, the self-assessed lying ability correlated positively with narcissism [11–13] and negatively with religiosity [14]. The results were particularly actual for religious women, who tended to underestimate their lying ability more than other groups [14]. It was further obtained that high lie-telling ability scorers were better detected by the polygraph than their low self-proclaimed lying ability counterparts [15]. Finally, self-considered lying scores predicted deception to a virtual partner [11] but not in a face-to-face lie-detection situation [16]. Based on what we know about the self-assessed lying ability, we constructed four self-assessed ability statements to reflect this perceived ability.

In contrast to the self-assessed lying ability, people rate their lie detection ability higher than average [10]. Such an overestimated ability is biased because it is incompatible with actual lie detection performance [5]. Bond and DePaulo [5] noted that successful lie

detection is only slightly better than chance. It was explained that people assume that most communications are truthful and, if not, the lies can be detected without difficulty. People are further unwilling to believe that others can easily deceive them and protect themselves by enhancing their ability to detect such attempts [13]. We constructed four lie-detection ability statements to examine further the link between the reported lie-detection ability, frequent disbelieving, and successful lie detection.

1.1. Hypotheses

The described biases predict different outcomes about frequent and successful lying and disbelieving. Accordingly, the following rival hypotheses are formulated:

1. According to the truth preference bias, senders would tell more truths than lies, and recipients would reciprocate by trusting the messages more than disbelieving them. No differences in frequent lying between the three communication conditions would evolve. A higher-than-average truth-telling and truth-detection success rate would emerge at the cost of lower lie-telling and detection success rates.
2. Dominance of a belief that people can detect deception from visual cues in the face would predict fewer lies in the visible face condition than in the mask conditions. The recipient would reciprocate with more disbelieving in the mask conditions than in the visible face condition. Consequently, the mask conditions would yield higher lie detection and lower truth detection success rates compared to the visible face condition.
3. Guided by the “illusion of transparency” phenomenon, we may assume that senders feel that their inner feelings and thoughts are transparent and leak to the recipient. In the blindfolding condition, the absence of feedback from the recipient would increase the sender’s illusion and cause them to lie less. A similar, although moderated effect, appears in the face mask condition. The reduced feedback from the recipient enhances truth-telling. Participants in the recipient role would reciprocate and believe the sender more while wearing a mask. Therefore, the illusion of transparency predicts fewer lies in the mask conditions than in the visible face condition, and consequently, truth detection success rates would increase.
4. If the face mask reminds honesty standards, more truth-telling and fewer lies would unfold in the face mask condition than in the visible face condition. In the blindfold condition, participants also wear a face mask, but the condition is not normal and therefore fails to remind honesty standards.
5. If the touchy feel is more sensitive to lie detection than facial changes, a higher lie-detection success rate in the blindfolding than in the other conditions will emerge.
6. People’s self-considered ability to tell lies persuasively predict more lies in the experiment. Self-assessed lie-detecting ability does not predict disbelieving.

2. Methods

2.1. Participants

Overall, 96 students (76 females) were recruited for course credit through an online portal of Ariel University. The average age of the participants was 22.9 years ($SD = 2.01$ years). All participants signed a consent form indicating their willingness to participate in the study. Participants were told that they could terminate their participation at any time without being penalized. Our results analyzed data from 96 participants who underwent various conditions in a counterbalanced within-subject design. Table 1 describes

Table 1
Counterbalanced groups, conditions, roles and sessions (order) across participants.

Groups 1,4,7	Groups 2,5,8	Groups 3,6,9
Session 1 Blindfolding	Session 1 Face mask	Session 1 Visible face
1* 2* 3 4	1* 2* 3 4	1* 2* 3 4
5 6 7* 8*	5 6 7* 8*	5 6 7* 8*
Session 2 Blindfolding	Session 2 Face mask	Session 2 Visible face
1 2 3* 4*	1 2 3* 4*	1 2 3* 4*
6* 5* 8 7	6* 5* 8 7	6* 5* 8 7
Session 3 Visible face	Session 3 Blindfolding	Session 3 Face mask
1* 2* 3 4	1* 2* 3 4	1* 2* 3 4
8 7 6* 5*	8 7 6* 5*	8 7 6* 5*
Session 4 Visible face	Session 4 Blindfolding	Session 4 Face mask
2 1 4* 3*	2 1 4* 3*	2 1 4* 3*
8* 7* 6 5	8* 7* 6 5	8* 7* 6 5
Session 5 Face mask	Session 5 Visible face	Session 5 Blindfolding
1* 2* 7 8	1* 2* 7 8	1* 2* 7 8
3 4 6* 5*	3 4 6* 5*	3 4 6* 5*
Session 6 Face mask	Session 6 Visible face	Session 6 Blindfolding
2 1 8* 7*	2 1 8* 7*	2 1 8* 7*
3* 4* 6 5	3* 4* 6 5	3* 4* 6 5

Sender* Note. Numbers represent participants.

the counterbalanced conditions, roles, and sessions (order) across participants. Accordingly, all participants are gathered in a single group. In a recent study that used a similar face-to-face lying experiment [16], a power analysis was set on medium effect size ($f = 0.3$). However, a minor effect is anticipated in the present study. Therefore, we used a small effect size ($f = 0.25$) with a statistical power of .80 and $\alpha = 0.05$. The analysis indicated that 95 participants would be appropriate to detect the condition's effects.

2.2. Materials

2.2.1. Self-assessed lie telling and lie-detection items

We added four items about the self-assessed ability to tell lies persuasively as follows:

- (a) People notice my lies immediately (Reverse)
- (b) My friends believe me when I lie
- (c) I find it easy to convince others with my lies
- (d) I lie better than most people

Similarly, we added four items to the self-assessed ability to detect lies successfully as follows:

- (a) I am better at detecting lies than the average person
- (b) People agree that I am an able lie detector
- (c) People sense my inability to detect lies immediately (Reverse)
- (d) I find it easy to uncover lies of other people

For all lie-telling and lie-detection items, answers were given on a 5-point sequence from 1 (*not at all true*) to 5 (*very much true*), with an intermediate point of 3 (*no opinion*).

The self-assessed lie-telling and lie-detecting ability items were embedded with 12 other items, which were irrelevant to the present study.

The addition of the self-assessed ability questions was based on earlier accounts indicating that individuals tend to rate their lie-telling ability as good as others. In contrast, the lie-detection ability is overestimated [10].

Elaad [10] compared the two self-assessed abilities and reported that people tend to consider their ability to detect lies successfully higher than their ability to tell lies persuasively. In support of this conclusion, fifteen out of sixteen significant comparisons present an effect size (d) of at least 0.37.

However, the reviewed ratings were grounded on a single question: "Comparing to other people, how would you assess your ability to tell lies convincingly?" and "Comparing to other people, how would you assess your ability to detect lies successfully?" Since then, a scale of four questions for each self-assessed ability was introduced (LTAAS) [13]. The added questions enabled reliability measures. It was observed that Cronbach's Alpha was set at 0.894 and 0.896 for the respective lie-telling and lie-detecting scales. Still, the results of the LTAAS and the single-question tests were similar.

The present study formulated four new questions for each self-assessed ability. It is expected that the mean lie-detection ability would be rated higher than the mean lying ability, and the biased self-assessed ability scores would not predict actual lie-telling and lie-detection success. It is suggested that people are ignorant of their actual lie-related abilities but are influenced by biased assessments when making decisions [17]. It follows that higher lie-telling ability scores predict frequent lying.

After every session, participants were requested to indicate their acquaintance with their partner and how they thought their partner perceived their relationship. They gave answers on a 7-point scale ranging from 1 (*not at all acquainted*) to 7 (*very well acquainted*). Another question about friendship was answered on a 7-point scale from 1 (*not at all*) to 7 (*strong friendship*).

2.3. Procedure

The study complied with all established ethical guidelines, and the ethics committee of Ariel University approved the study. Participants arrived in groups of eight after being informed that the study was about lying. Four female experimenters welcomed the participants and gave them the consent form to sign. Next, the experimenters invited the participants to answer the lie-telling and lie-detection items. There was no time limit for answering. Each participant received a tag with a number between 1 and 8 on it. Then, participants were directed in pairs to four small rooms with a table and two chairs on opposite sides.

One experimenter performed the behavioral part of the experiment in each room. According to the tag number, the experimenter assigned each participant to the sender or receiver role and handed the sender a small box containing one ball and one cube hidden from the receiver. The task of the sender was to select one object of choice, hide it in their fist and reach out the closed fist while stating that the hidden object was a ball. The receiver wrapped the fist with their hand and decided to believe or not to believe the sender. The procedure continued for five consecutive trials.

While senders were free to choose the hidden object, the experimenter instructed them to pick any object at least once. Receivers indicated their decision on a form hidden from the sender. Meanwhile, the experimenter took the box and recorded the missing object as the selected one. The sender's goal was to win the game by convincing the other participant to believe them in as many game trials as possible. The receiver's goal was to win the game by detecting the other participants lies and believing their truths as many times as possible. After five attempts, participants were separated, and each went to a different room to continue the experiment. Participants

also changed roles (the former sender turned to be a receiver and the former receiver a sender). The experiment continued for another five trials, after which participants again changed places and roles to meet a new partner. The condition (visible face, face mask, blindfolding) changed in the third session. In sum, each participant underwent six sessions in which they served three times as senders and three times as receivers under three communication conditions. Roles, conditions, and sessions (order) changed in a predefined counterbalanced manner as specified in Table 1.

The acquaintance between participants in each dyad can affect the occurrence of telling truths and decisions to believe. The probable acquaintance effect was controlled by asking participants after each session about their familiarity with their cohort and assessing how their cohort saw their relationship. A third question asked about a possible friendship between the two partners.

Finally, the experimenters determined the participant who performed best (convinced their partners to believe them in more experimental trials than other participants), announced the winner and rewarded them with additional credit. Then, participants were thanked and debriefed about the purpose of the study.

3. Results

3.1. Manipulation check: acquaintance effects

After each session, participants indicated their acquaintance with their cohort on a scale ranging from 1 (*not at all acquainted*) to 7 (*very well acquainted*). Answers were averaged for each participant across three different acquaintance questions and partners. The mean acquaintance score across participants was 1.50 (SD = 0.70). As the mean score is low, it may be concluded that acquaintance between cohorts in the experiment did not affect the present results.

3.2. Number of lies and disbeliefs

A recent study that used a visible face lying design [16] reported that the number of lies was significantly smaller than the chance expectancy. The truth-telling bias explained the outcome. The relative frequencies of lies in the present study were obtained by summing up the number of lies in every condition and across conditions. The results appear in Table 2. We also examined the disbelieving rates. The number of disbelieving responses for every condition and across conditions is computed and displayed in Table 2.

A one-way ANOVA with repeated measures was conducted on the senders lies in the three experimental conditions, $\epsilon = .97$. The effect is not significant, $F_{(1.99, 190)} = 2.58$, $p = .078$. Results indicate that the number of sender's lies (and consequently truths) is not different in the three conditions. However, a closer inspection of Table 2 shows that the frequency of lying in the face mask condition stands out as relatively low. A t -test for one mean shows that the number of lies in the face mask condition is significantly lower than the chance expectancy of 2.5, $t_{(95)} = -2.63$, $p = .01$, $d = -0.27$.

A similar significant difference was obtained when the lying frequency in the face mask condition was compared with the visible face condition, $t_{(95)} = -2.04$, $p = .044$, $d = -0.21$ (matched sample t -test). Although the effect size is small, results suggest that wearing a face mask cause people to lie less than the visible face. The truth-telling bias cannot explain the lower-lying responses because it does not appear in the two other conditions.

A similar procedure was employed for the number of receivers' disbeliefs (Table 2). This time, no significant results were obtained.

3.3. Generating a performance index for the production and detection of lies and truths

Following Elaad and Gonen-Gal [16], we used an individual performance index for every participant, each activity (production and detection of lies and truths), and every communication condition (visible face, face mask, and blindfolding). To generate the indexes, we computed the percent of successful activities out of the total number (successful and unsuccessful) of these activities. The average performance indexes across participants are presented in Table 3.

A 2×3 ANOVA with repeated measures for both factors, production (lies, truths) and condition (visible face, face mask, and blindfolding), was conducted on the performance indexes. No significant production effects were obtained, indicating no differences between the successful production of lies and the convincing performing of truths, irrespective of the communication condition.

As to detection results, Table 3 shows that the lie detection success percent are similar for the three conditions and not different from chance (0.50). However, truth detection shows fluctuations in the performance indexes. Therefore, we performed a One-Way ANOVA with repeated measures on the truth detection performance indexes, $\epsilon = 0.98$. Results were not significant, $F_{(1.96, 190)} = 2.51$, $p = .085$. Still, using a matched sample t -test, the difference between the two standard conditions at the time of the study (visible face and face mask) is significant, $t_{(95)} = 2.07$, $p = .042$, $d = 0.21$. Specifically, participants achieve more significant success detecting truthful messages wearing the face mask than with the visible face.

Table 2

Mean number (and SDs) of lies (sender) and disbeliefs (receiver) in the three communication conditions.

Visible face	Face mask	Blindfold		
Senders lies	2.51 (.75)	2.28 (.82)	2.48 (.85)	2.42 (.52)
Receivers disbeliefs	2.47 (.85)	2.50 (.73)	2.51 (.75)	2.49 (.50)

Table 3

Percent means (and SDs) of successful production and detection of lies and truths computed for three communication conditions.

Visible face	Face mask	Blindfold		
Lie telling	.53 (.31)	.51 (.36)	.52 (.33)	.52 (.20)
Truth telling	.47 (.33)	.49 (.27)	.49 (.33)	.49 (.17)
Across production	.50 (.20)	.50 (.18)	.51 (.19)	.50 (.11)
Lie detection	.48 (.31)	.48 (.29)	.49 (.33)	.48 (.15)
Truth detection	.45 (.32)	.55 (.32)	.49 (.31)	.50 (.19)
Across detection	.47 (.25)	.51 (.25)	.49 (.26)	.49 (.14)

3.4. Self-assessed lying and lie-detection ability analysis

After reversing one item, the reliability of the four lie-telling (LT) items was computed using Cronbach's α . The reliability was: $\alpha = 0.84$. Then, the answers to the four LT items were averaged for each participant, and the average score across 96 participants was computed. The statistics were: Mean = 2.9, SD = 0.90, 95% CI = 2.72–3.08. In summary, participants reported their lie-telling ability as not different from the middle point 3.

A similar procedure was used for the lie-detection (LD) items. After reversing one item, the reliability of the four LD items was set at $\alpha = 0.83$. Averaging the four LD items showed: Mean = 3.3, SD = 0.82, 95% CI = 3.15–3.48. It turned out that participants self-assessed being efficient lie detectors (the lower bound of the confidence interval is higher than the middle point 3). In addition, a positive correlation was found between the average LT and LD items, $r_{(96)} = 0.26$, $p = .01$.

Table 4 shows that the mean lie-telling items predict the number of the sender's lies in the face mask condition but not in the other two conditions. The higher the LT score, the more lies the participant tells. Specifically, there are individual differences in complying with the honest behavior that the mask raises. Higher LT raters are less sensitive to the face mask influence than lower LT raters.

Similar regression analyses for predicting the number of disbeliefs by the LD items failed to present significant results.

Still, based on published meta-analyses, men lie more than women [18,19]. A recent study that used a design like the present one [16] supported the gender difference conclusion. These results are consistent with men's higher self-assessed lie-telling ability than women's [10,20,21]. The following question is: To what extent did the participant's gender influence the present results? To answer the question, we first compared the self-assessed lie-telling ability of men and women. It turned out that men (mean = 3.61, SD = 0.76) self-assessed their lying ability significantly higher than women (mean = 2.71, SD = 0.84), $t_{(94)} = 4.36$, $p < .001$, $d = 1.12$. The self-assessed ability is related to frequent lying [16]. Indeed, men (mean = 2.72, SD = 0.60) lied more often than women (mean = 2.35, SD = 0.47), and the difference is significant, $t_{(94)} = 2.96$, $p = .004$, $d = 0.69$. Nevertheless, compared with the visible face condition, the moderated number of lies in the face mask condition was not different for men and women, and a similar (about 9%) reduction was obtained. Specifically, men lied less (mean = 2.55, SD = 0.95) in the face mask condition than in the visible face condition (mean = 2.80, SD = 0.77). Yet, due to the small number of male participants, the difference is not statistically significant, $t_{(19)} = 1.23$. In the visible face condition, women lied on average 2.43 times (SD = 0.74). They reduced their lying rate to an average of 2.21 (SD = 0.77) in the face mask condition. Women's sample size is adequate to show that the difference is significant, $t_{(75)} = 1.70$, $p = .047$ (one-tail).

4. Discussion

The result that stands out here is the low lie-telling rate (and high truth-telling frequency) in the face mask condition (Table 2). Comparing the two normal conditions at the time of the study (visible face and face mask) reveals that the lying rate in the face mask condition is significantly lower than in the visible face condition. Therefore, wearing a face mask triggers people to lie less than the visible face. The hypothesis that best explains the current results is that wearing the face mask emphasized the norms and standards that prevailed when the plague was active. During the plague, people accepted restrictions imposed on them by the government. The restrictions enhanced solidarity, helping, caring, and thoughtfulness and increased honesty. The phenomenon was previously reported by Mazar et al. [9], who indicated that reminding people of moral rules is enough to make them behave by these moral standards. In summary, wearing the face mask reminded participants to behave morally and lie less.

Another interesting finding is the prediction of the self-assessed lying ability scores about the number of lies told with the face mask. The prediction was not replicated in the two other conditions. Explicitly, high lie-telling ability scorers were less influenced by wearing the face mask than low-ability scorers. Individual differences in the impression that the face mask makes may be translated to differences in the number of lies told.

Furthermore, participants successfully detected truthful messages while wearing a mask than with a visible face. Intuitively, such a result would be related to more believing than disbelieving decisions. However, Table 2 shows that this is not the case, and recipients in

Table 4

Regression statistics computed for LT prediction of the number of lies told in the three communication conditions.

B	β	t	p		
Visible face	.143	.171	1.68	.097	2.9%
Face mask	.212	.233	2.32	.022	5.4%
Blindfolding	.123	.131	1.28	.205	1.7%

the face mask condition made the same number (average 2.5) of trusting and distrusting decisions. Therefore, it is left to determine whether the face mask enhances sensitivity to truthful messages. Furthermore, does the reminding of the honesty standard include a better absorption of truthful messages than dishonest ones? The minor effects that were obtained require additional research to examine these questions and decide if they entail new information or are an artifact. Until then, caution is recommended in explaining these results.

The present study showed that men self-assessed their lying ability higher than women and lied more often than women. The results replicate earlier results [19]. However, the gender difference in lying did not affect the results of the face mask condition.

We may use a face mask whenever frequent lying is expected, and one wants to enhance the partners' honesty (e.g., in job application interviews). Nevertheless, the present study indicated individual differences in the sensitivity to the masking effect. For example, people who consider themselves successful liars are less sensitive to the masking effect than people who consider themselves less successful liars. Therefore, the different sensitivities may weaken the application of the face mask.

Finally, the present results may need to be updated since people do not wear face masks anymore. In contrast, in countries in East Asia, such as Taiwan, which suffered from the SARS, people wore masks in public places before the pandemic and continue to wear them. In other countries, older people maintain mask-wearing in close, crowded public places. Further, in Israel, people are required to wear a mask in medical institutions, and the medical staff wears a mask when interacting with patients. Finally, COVID-19 stays with us, and wearing a face mask in official close places is not unusual.

4.1. Research limitations and suggestions for future research

The present study consists mainly of women. Most of them participated in a female dyad. Most men, on the other hand, were engaged in male dyads. Since men are significantly more likely than females to tell lies [18], gender differences in lying may affect situations that examine lying and lie detection. Although our analysis showed that the present study was not affected, future research is advised to use a more balanced sample.

The participants in the present study were undergraduate students who participated for course credit. Being a young student may imply some adaptive personality, higher cognitive abilities, the motivation to accept academic standards, and the responsibility to complete tasks on time. Such a personality may prefer to be honest and lie less. Although truth-telling in the present study was as frequent as lying, a replication of the present study with a more heterogeneous sample is endorsed.

Finally, the present study is about Israeli students. As lying may be culture-dependent, the study must be replicated in other cultures, especially in east Asia, where wearing a mask in crowded places is habitual.

4.2. Conclusions

The present study is the first and only attempt to examine the effect of wearing a face mask on frequent lying and its successful detection. It was demonstrated that wearing the face mask is associated with an enhanced truth-telling rate, and recipients were more trusting and successful in detecting truths. It was explained that the mask reminded participants of the norms during the pandemic, where people were more helpful and thoughtful and, therefore, less manipulative and deceptive. Results further suggested individual differences in people's sensitivity to previous standards of honesty.

Author contribution statement

Eitan Elaad: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of competing interest

The authors declare no competing interests.

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