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Working (out) with fitness influencers – benefits for the fitness influencer, user health, and the endorsed brand: Key factors and the role of gender and brand familiarity

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Abstract

Objective: Fitness influencers have become important digital health communicators with regard to influencing consumer health behaviours, such as physical activity. We investigate how working (out) with these new communicators can generate benefits for the fitness influencer, user health, and endorsed brands. Based on the source credibility, social identity theory, and gender congruity research, this paper aims to identify the main factors that affect users' attitudes toward the fitness influencer (influencer benefit), users' exercise intentions (user health benefit) and their purchase intentions (brand benefit), considering user and influencer gender.

Methods: Two studies were conducted, both with male and female influencers and users. In study 1 (n = 496), the fitness influencer endorsed an unfamiliar brand, and in study 2 (n = 529) a familiar brand was endorsed. To test the proposed models and to estimate the path coefficients, structural equation modelling was performed.

Results: Key influencing factors were identified in the two studies: For attitude toward the influencer, source credibility is the most important; for exercise intention, parasocial interaction and attitude toward the behaviour are crucial; and purchase intention is largely predicted by the brand attitude. The studies revealed gender-congruent and non-congruent tendencies for female and male respondents, and different effects of unfamiliar and familiar brands.

Conclusions: Working (out) with fitness influencers can improve user attitudes toward the influencer, increase users' exercise intentions, and increase brand purchase intentions, for both unfamiliar and familiar brands. Some gender congruity and some gender incongruity effects exist. The paper discusses important implications for theory and practice.

Keywords

Influencer, digital health communicators, social media, fitness, exercise, physical activity, attitude

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Introduction

Social media influencers are individuals who share content with their followers through their social media accounts.[1,2] If they specialize in fitness, they are labelled as fitness influencers. Often, fitness influencers share exercise videos on social media channels, e.g., on YouTube or Instagram, in which they demonstrate exercises and try to motivate users to emulate the demonstrated physical activity. In

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many of the videos, brands are visible, e.g., when the fitness influencer wears a branded jersey. Particularly the platform YouTube has become a popular outlet for health and fitness-related information shared by fitness influencers and health professionals,[3,4] where followers can watch and engage in fitness-related video content for free and with low access barriers. Sparked by the COVID-19 pandemic and the associated lockdowns, fitness influencers are playing an increasingly important role in promoting physical activity by offering digital exercise classes to get or stay active at home.[5,6]

Fitness influencers are relevant promotors of health and social behaviour change.[7] They share health and fitness-related tips and product or brand recommendations with their followers,[3] and can motivate users to exercise with them.[2] Previous studies have shown that fitness influencers have a positive effect on physical activity, especially among people who are already exercising.[3] Hence, they can contribute to combat the negative consequences of physical inactivity on people's health,[3,8] with regard to diseases (e.g., cardiovascular diseases, diabetes) and associated risk factors (e.g., increased blood pressure and obesity).[9] Physical inactivity has become one of the major risk factors for mortality from non-communicable diseases. For this reason, the WHO has set a goal of reducing physical inactivity by 15 percent by 2030.[10] Fitness influencers can support this goal.[2,11]

In addition to the users whose physical activity might be increased, influencers themselves can also benefit from offering their exercises to the users. Influencers strive to create positive attitudes among followers so that they can increase their follower numbers and market value to become more attractive for, e.g., advertisers, which might ultimately create income.

Furthermore, fitness influencers often endorse (fitness-related) brands, i.e., brand cooperations and sponsored content are prevalent among influencers when they address their followers.[12,13] Influencers have been found to effectively promote brands in different contexts, thus brands are likely to benefit from influencer endorsements (see Vrontis et al.[14] or Hudders et al.[7]), particularly influencers with high trustworthiness, expertise, and authenticity carry the potential to improve brand appeals.[7] To increase the effectiveness of social marketing and health communication, scholars have emphasised the potential of branding strategies.[15,16] Influencers who build strong personal brands or their endorsement of branded products that motivate users to engage in increased physical activities could be good examples of such branding strategies.

Previous research mainly indicates that fitness influencers have the ability to influence their followers' attitudes and behavioural intentions.[2,3] In our study, we focus simultaneously on the three potential beneficiaries of working out with fitness influencers, addressing an important research gap. We identify important factors that lead to benefits for (1) the user (increased physical activity), (2) the fitness influencer (better user attitude towards the influencer), and (3) the brand (higher brand purchase intention), when users work out with fitness influencers. In addition, we aim to explore gender differences and differences in the endorsement of familiar versus unfamiliar brands.

Drawing from the source credibility theory, social identity theory, and gender congruity research, we empirically develop and test a model that explains the effects of fitness influencers on users' attitudes toward the influencer (influencer benefit), users' intention to exercise (user health benefit) and users' purchase intention (endorsed brand benefit) on YouTube. The source credibility theory[17] has been frequently adopted in the social media and influencer marketing context to explain the effects of influencers on users.[14] It helps to explain how an influencer's trustworthiness, expertise, and attractiveness impact users' reactions related to the above-mentioned physical activity, influencer evaluation, and brand evaluation. Social identity theory[18,19] can potentially explain user responses to influencers related to perceived similarity, parasocial relationships, as well as gender-related effects.[20] In addition, gender-congruity research[21] can contribute to explaining gender-related effects and preferences for the same- or other gender influencers.

We have extended previous research[2] on fitness influencers, which is still scarce, and responded to recent calls[22,23] to further examine the potential of fitness influencers to stimulate exercise. We further responded to calls[20] for research on different brand scenarios and examined the effects of familiar and unfamiliar brands, and to calls for more research with regard to gender-related effects.[20] Thus, we have contributed to the evolving research on fitness influencer effectiveness, fitness influencer source effects, health branding, and consumer outcomes by focusing on user health-related, fitness influencer-related, and brand-related outcomes.

Theoretical background and hypotheses development

Figure 1 depicts the conceptual model. It examines important factors that affect consumers' attitudes toward the fitness influencer, users' intention to exercise, and purchase intention for an endorsed brand. The influencer gender and user gender are integrated as moderators, and we also compared the effects of brand familiarity (familiar versus unfamiliar brand). The variables were selected based on the source credibility theory, social identity theory, gender congruity research, and integrative framework by Vrontis et al.[14] In the following sections, we provide a detailed rationale for our model.

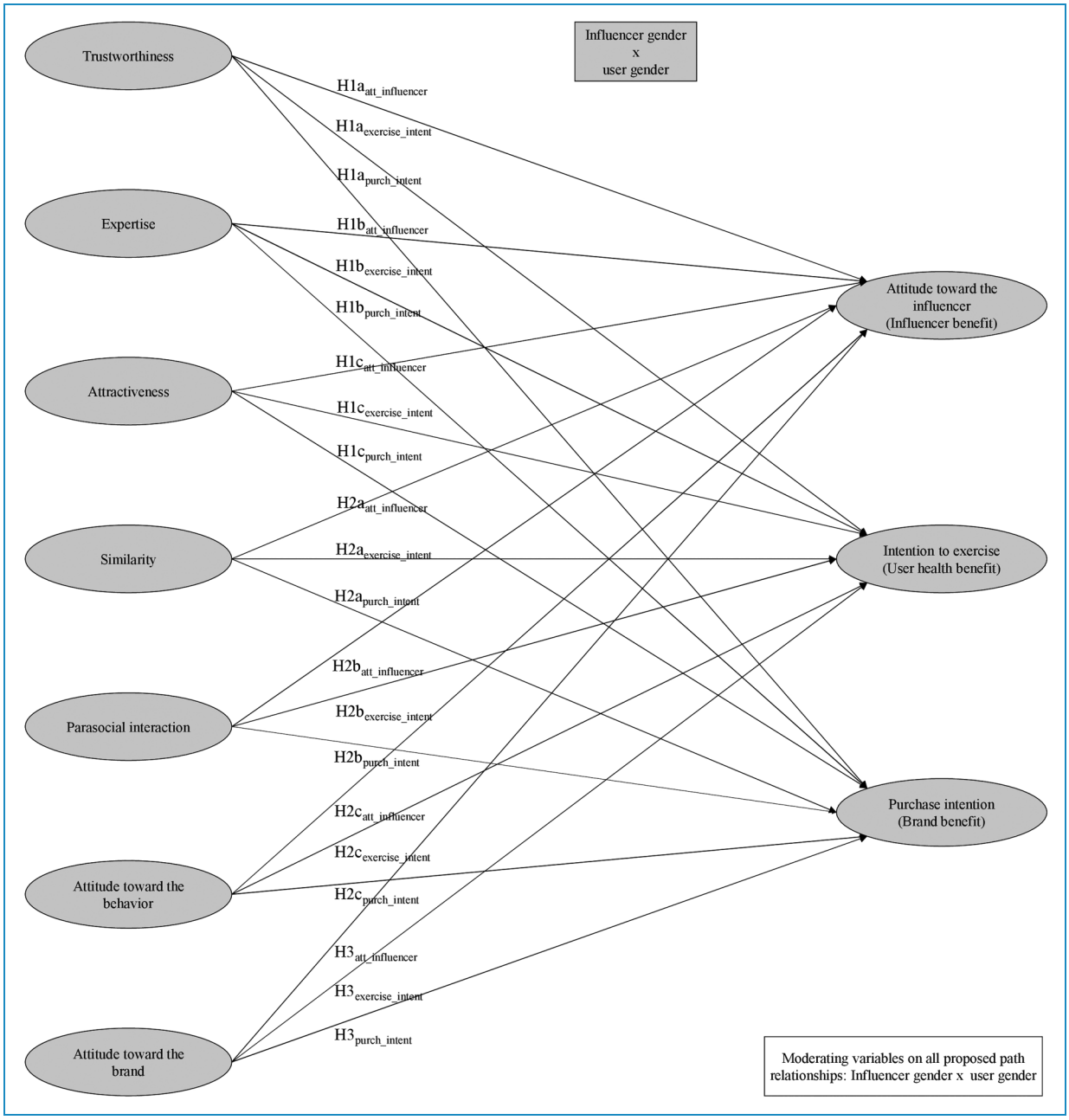

Figure 1. Conceptual fitness influencer model

Factors influencing the attitude toward the fitness influencer, intention to exercise, and purchase intention

Influencer-related factors. The influencer research has primarily been adopted on Ohanian's[17] source credibility model,[14] which comprises the factors trustworthiness, expertise, and attractiveness. These three dimensions have been identified as important, significant predictors for ad effectiveness and have been shown to positively enhance consumer outcomes.[7,14] The three dimensions of perceived source credibility have proven to be very relevant in terms of explaining influencer success;[14] thus they are applied in this research to explain fitness influencer effectiveness. *Trustworthiness* refers to the influencer's perceived believability and honesty.[17] *Expertise* describes the influencer's depth of knowledge in a specialized area.[17] *Physical attractiveness* refers to an individual's physical evaluation of another person.[17] Previous influencer research identified positive effects of influencer's trustworthiness, expertise, and attractiveness on consumers' behavioural intentions[2] and purchase intentions.[24] Breves et al.[25] revealed the

positive effects of source credibility on brand attitude and behavioural intentions. Another research study[26] showed that an influencer perceived as an expert in the area where the product is placed and whose image is consistent with the brand's image, increases positive follower responses.

Based on these findings, we assume that trustworthy, expert and attractive fitness influencers lead to more favourable attitudes toward the influencer and increase users' exercise intention and purchase intention for the placed brand. Hence, we propose:

$H1_{att\_influencer}$: The higher the influencer's a) trustworthiness, b) expertise, and c) attractiveness, the more favourable the attitude toward the influencer.

$H1_{exercise\_intent}$: The higher the influencer's a) trustworthiness, b) expertise, and c) attractiveness, the higher the users' intention to exercise.

$H1_{purchase\_intent}$: The higher the influencer's a) trustworthiness, b) expertise, and c) attractiveness, the higher the purchase intention for the brand.

User health-related factors. Previous research indicates that feelings of similarity and parasocial interaction are two key factors that can explain consumers' favourable attitudes and behavioural intentions toward fitness influencers.[7,14] Social identity theory[18,19] posits that a person's self-perception is based on their membership in a social group. Consumers identify with similar others (their in-groups) and in-group membership can help improve the individual's image and self-identity.[27] Therefore, an individual may identify with influencers that match their own image.[28]

Similarity describes the degree to which an individual perceives that another person has similar characteristics, interests, or values to their own.[29] Perceived similarity to communicators has been found to be positively related to message effectiveness.[30] Endorsers perceived as similar can promote consumers' adoption of attitudes or behaviours.[31] Influencers' perceived similarity was also found to increase favourable brand outcomes.[32] *Parasocial interaction (PSI)* originated to explain imagined relationships that TV, film, or radio audiences may have with media personalities,[33] as endorsers can influence their audiences' perceptions through PSI.[34] PSI can also be established between an influencer and their followers and has been considered an important influencer characteristic.[7] Prior influencer research suggests that PSI is positively related to behavioural intentions[3] and purchase intentions.[35] For instance, Sokolova and Perez[3] suggest that fitness influencer followers who have developed stronger PSI with the fitness influencer are more willing and motivated to exercise with the influencer.

The attitude toward the behaviour is another variable related to user health. Drawing from the theory of planned behaviour (TPB), the attitude toward a behaviour is likely to influence and explain the said behaviour.[3,36,37] Hence, users' general attitude towards working out with an influencer is likely to impact the attitude toward the influencer, intention to engage in the behaviour themselves, and purchase intention.

Therefore, we expect that higher perceived similarity, PSI, and favourable attitudes toward the behaviour positively influence consumers' attitudes and behavioural intentions. We propose the following hypotheses.

$H2_{att\_influencer}$: The higher the users' a) perceived similarity to the influencer, b) perceived PSI with the influencer, and c) the more favourable the attitude toward the behaviour, the more favourable the attitude toward the influencer.

$H2_{exercise\_intent}$: The higher the users' a) perceived similarity to the influencer, b) perceived PSI with the influencer, and c) the more favourable the attitude toward the behaviour, the higher the users' intention to exercise.

$H2_{purchase\_intent}$: The higher the users' a) perceived similarity to the influencer, b) perceived PSI with the influencer, and c) the more favourable the attitude toward the behaviour, the higher the purchase intention for the brand.

Brand-related factors. Many fitness influencers endorse brands when demonstrating their exercises. The meaning transfer model[38] posits that a celebrity endorsement depends on a set of associations that the celebrity inherently transfers to the endorsed brand. These attributes are ultimately recognized by consumers. Through this process, celebrity advertisers can influence consumers' perceptions and attitudes towards the brand. Following the meaning transfer model, the products advertised by fitness influencers are likely to be considered as quality products by respondents based on their positive perception of fitness influencers.[39] While meaning transfers can occur from the celebrity to the product, the transfer can also be in the opposite direction, i.e., brands or products transfer meaning to an endorser.[40,41] Another research[42] indicates that favourable perceptions of a brand used by an endorser can improve the endorser's attractiveness, trustworthiness, expertise and credibility. Hence, transferred to fitness influencers: If fitness influencers feature a brand in their video, a positive brand attitude likely impacts the influencer's evaluation. Thus, we posit:

$H3_{att\_influencer}$: The more favourable the attitude toward the brand, the more favourable the attitude toward the influencer.

The relationship between brand attitudes and behavioural intentions has been extensively studied. Brand attitude affects many brand-related outcomes.[43,44] Research indicates that consumers with more favourable attitudes toward a brand have higher brand purchase intentions.[45,46] A systematic review[47] of the effects of branding on physical activity implies that several brand equity variables (e.g., brand awareness and brand associations) have the ability to enhance physical activity (moderate or vigorous). Therefore, we assume that the brand attitude might impact physical activity behaviours, i.e., better attitudes towards the endorsed brand can increase users' exercise intentions. We propose:

$H3_{exercise\_intent}$: The more favourable the attitude toward the brand, the higher the users' intention to exercise.

$H3_{purchase\_intent}$: The more favourable the attitude toward the brand, the higher the purchase intention for the brand.

The moderating role of gender

Gender has been considered an important factor for better understanding health-related behaviours.[48] Recent research has shown that it is important to focus more on the role of user and influencer gender and gender congruity or incongruity when studying user reactions to fitness influencers.[2] Gender congruity refers to a match between the influencer and the user gender,[21] while gender incongruity means that user and influencer are of different genders. Previous influencer research has mostly focused on gender-congruent samples,[20] e.g., a female influencer and a female sample.[49] Jin and Ryu[50] demonstrated that gender (in)congruity can impact results. Including a gender-incongruent sample in their study on female fashion influencers endorsing a fashion brand, they found that women trusted the female fashion influencer more, while men trusted the fashion brand more. The study by Hudders and Jans[20] on Instagram postings of male and female travel influencers found that gender congruity only had positive effects on the persuasiveness of an influencer's post (via perceived similarity and PSI) for women. No effect was found for men. Recent research[2,20] calls for more research on gender effects in an influencer context and we contribute to this important stream of influencer research by investigating the following research question:

RQ1: How do fitness influencer gender (male versus female) and user gender (male versus female) impact the model relationships? What are the roles of gender congruity and gender incongruity?

The role of brand familiarity

Fitness influencers often endorse brands in their exercise videos. As outlined above, meaning transfer is likely to occur from the endorser to the brand and vice versa. We further aim to analyse possible effects related to the placement of either a familiar or an unfamiliar brand on users' attitudes towards the influencer, intention to exercise, and brand purchase intention. In general, consumers tend to respond positively to well-known or familiar brands as their knowledge is well-established, and more cautious to unknown brands due to the lack of knowledge.[51,52] However, unfamiliar brands appear to benefit more from a celebrity's endorsement compared to familiar brands because the celebrity draws more attention to the unfamiliar brand.[53]

Following their study of a familiar brand, Hudders and Jans[20] call for research on unfamiliar brands and argue that using influencers might be an interesting approach for increasing awareness of unfamiliar brands, as consumers often have high trust on influencers' recommendations as they assume lower commercial interest. Thus, by including an unfamiliar brand in study 1 and a familiar brand in study 2, we extend the current research and respond to the call for more research on the role of brand familiarity in the user-influencer relationship. We investigate the following research question:

RQ2: What is the role of the brand (familiar versus unfamiliar) in the model relationships?

Method

Two studies were carried out. Both studies included a female and a male fitness influencer demonstrating an abdominal muscle (abs) exercise in a YouTube video clip. The subjects were female and male users. In study 1 (n = 496), the influencers wore a jersey with an unfamiliar brand. In study 2, the influencers wore a jersey with a familiar brand. The aim was to examine three perspectives: the influencer's effectiveness on users' (1) attitudes towards the influencer, (2) intention to exercise, and (3) brand purchase intention taking into account the familiar and unfamiliar brand as well as the gender of the influencer and the user.

The stimulus material and the procedure are explained in more detail below.

Study 1

Design, stimuli selection and pre-tests

Study 1 aimed to provide empirical evidence for hypotheses 1–3 regarding *unfamiliar* brands. Prior to the main study, we conducted two pre-tests.

Pre-test 1. The aim of the first pre-test was to select the YouTube video clips by two German fitness influencers (male/female). For the stimuli selection, the authors researched YouTube fitness clips featuring German fitness influencers (male/female) without brand promotions, demonstrating an abs exercise. Twenty-seven undergraduate students ($M_{age} = 21.24$ years; 59.3% female) watched the selected fitness influencers' YouTube video clips, discussed them afterwards in a qualitative group discussion, and evaluated the final male and female fitness influencers as being most similar in terms of trustworthiness, expertise, and attractiveness. Both videos were 47 s long.

Pre-test 2. The second pre-test aimed to determine the suitability of the final YouTube video set (male and female version) and the questionnaire's comprehensibility. A pre-test with 25 undergraduate students ($M_{age} = 22.56$ years; 72% female) confirmed with qualitative group-discussions that the video was suitable. The questionnaire was comprehensible, as respondents reported no difficulties in filling in the questionnaire and left no comments in the comment fields.

Manipulation check. Both influencers wore sportswear with the logo of an unfamiliar brand. We checked whether both brands were perceived as unfamiliar and this was indeed the case (female influencer brand familiarity: M = 2.09, SD = 1.980; male influencer brand familiarity: M = 1.52, SD = 1.297; 7-point Likert scale, 7 = high familiarity).

Participants and procedure

Study 1 was a survey study in which only anonymized data was collected, for which no ethical approval is required under European law. It was a human-subject study that posed no more than minimal risk to subjects. Respondents were assured in writing before completing the questionnaire that data collection would be anonymous (i.e., no identifying factors could be linked to the data, directly or via a coding system), that participation was entirely voluntary, and that they could stop the study at any time without consequences. The participants received all the information they needed to give their consent in writing before the survey began. Written consent was obtained from all participants. The criteria of the European General Data Protection Regulation (GDPR) are met in the study.

We applied a 2 (male/female influencer) x 2 (male/female user) experimental design. Study 1 had a non-student sample of 496 subjects ($M_{age} = 35.03$ years, from 18–72 years, 52.2% female) from the German-speaking area. We ensured an equal gender distribution. To participate in the survey, respondents had to be between 18 and 75 years old. Data was collected using a structured online questionnaire, which was created with the online survey platform LimeSurvey. The survey respondents were recruited by distributing the questionnaire online through e-mail, social media (e.g., Facebook), and via the online consumer panel ClickWorker (comparable to MTurk in the USA). The survey was customised for mobile and computer devices. Participants were randomly assigned to one influencer (either male or female). After answering a few general questions about fitness and influencers, they were asked to watch the fitness influencer's video clip. We designed the questionnaire setting in a way that the YouTube video clip had to be watched to the end before the survey continued and participants were informed beforehand that they had to answer questions related to the video. After watching, the participants filled in the questionnaire. Sociodemographic data (age, gender, and nationality) were collected, too. The survey ended with debriefing and thanking the respondents for their participation.

Measures

Items were derived from established scales and adapted to the research context. Appendix 1 reports all details on scale references, variable items, means, standard deviations, Cronbach α values (multi-item measures), and Spearman-Brown coefficients (two-item measures). Factor analyses were performed to confirm the one-dimensionality of the multi-item scales. Reliability analyses were conducted for all variables.

Trustworthiness and *expertise* were initially measured separately based on Ohanian's[17] source credibility scale. Factor analysis results indicated that the items formed a single factor (five items, α=.956). The combined factor was labelled as source credibility, as in Schouten, Janssen, and Verspaget.[54] *Attractiveness* was measured with three items, adapted from Ohanian's source credibility scale[17] (α=.949). *Similarity* was assessed with four items, adapted from Lee and Watkins[55] (α=.913). Three items, adapted from Lee and Watkins,[55] measured the *PSI* (α=.906). *Attitude toward the behaviour* (α=.962), *brand attitude* (α=.954), and *attitude toward the influencer* (α=.947) were assessed with three items each, adapted from MacKenzie and Lutz.[56] The *intention to exercise* was assessed with two items, adapted from Ajzen[57] (Spearman-Brown coefficient = .956). Two items, adapted from Putrevu and Lord,[58] measured the *purchase intention* (Spearman-Brown coefficient = .877).

Statistical analyses

To assess the measurement model for the whole data set, we performed a confirmatory factor analysis (CFA) using IBM SPSS AMOS 25. The results generated an acceptable overall model fit (x2/df = 2.672, CFI = .961, TLI = .969, RMSEA = .058) and acceptable local fit measures.[59,60] Appendix 2 reports the average variance extracted (AVE), composite reliability, indicator reliability, and discriminant validity.[61]

Table 1. Study 1: SEM results.

Path		H	Female influencer–Females (N = 130)	Female influencer–Males (N = 122)	Male influencer–Females (N = 129)	Male influencer–Males (N = 115)
Source credibility	Attitude toward the influencer	H1a/$b_{att\_influencer}$	0.583***	0.769***	0.474***	0.493***
Attractiveness		H1$c_{att_influencer}$	0.248***	0.139	0.129	−0.003
Similarity		H2$a_{att_influencer}$	0.142**	0.128	−0.027	0.104
PSI		H2$b_{att_influencer}$	−0.021	−0.277**	−0.103	0.102
Attitude toward the behaviour		H2$c_{att_influencer}$	0.104	0.073	0.429***	0.322***
Attitude toward the brand		H3$_{att_influencer}$	0.013	0.003	0.057	0.04
Source credibility	Intention to exercise	H1a/ $b_{exercise\_intent}$	−0.158	−0.316**	0.078	−0.066
Attractiveness		H1$c_{exercise_intent}$	−0.005	−0.028	−0.013	−0.104
Similarity		H2$a_{exercise_intent}$	0.227**	0.139	0.215**	0.120
PSI		H2$b_{exercise_intent}$	0.274**	0.661***	0.332***	0.222**
Attitude toward the behaviour		H2$c_{exercise_intent}$	0.494***	0.472***	0.340***	0.670***
Attitude toward the brand		H3$_{exercise_intent}$	−0.005	−0.019	0.009	−0.010
Source credibility	Purchase intention	H1a/ $b_{purchase\_intent}$	−0.098	−0.361**	0.100	0.186
Attractiveness		H1$c_{purchase_intent}$	0.029	−0.066	0.106	−0.008
Similarity		H2$a_{purchase_intent}$	0.042	0.158	−0.089	0.166
PSI		H2$b_{purchase_intent}$	0.438***	0.695***	0.554***	0.504***
Attitude toward the behaviour		H2$c_{purchase_intent}$	0.172	0.182	−0.138	−0.171
Attitude toward the brand		H3$_{purchase_intent}$	0.395***	0.094	0.330***	0.191**
			x^2/df	TLI	CFI	RMSEA
Structural model study 1			1.912	.921	.935	.043

Note. *** $p < 0.01$; ** $p < 0.05$

Hypotheses were tested simultaneously with multi-group structural equation modelling (SEM).[62] Four groups were analysed (male/female influencer x male/female user). The multi-group SEM generated an acceptable model fit (x^2/df = 1.912, CFI = .935, TLI = .921, RMSEA = .043).[59,60]

Table 2. Study 1: Overview supported hypotheses.

		H	Female influencer – Females	Female influencer – Males	Male influencer – Females	Male influencer – Males
Source credibility	Attitude toward the influencer	H1a/$b_{att\_influencer}$	✓	✓	✓	✓
Attractiveness		H1$c_{att_influencer}$	✓			
Similarity		H2$a_{att_influencer}$	✓			
PSI		H2$b_{att_influencer}$		✓(neg.)		
Attitude toward the behaviour		H2$c_{att_influencer}$			✓	✓
Attitude toward the brand		H3$_{att_influencer}$				
Source credibility	Intention to exercise	H1a/$b_{exercise\_intent}$		✓(neg.)		
Attractiveness		H1$c_{exercise_intent}$				
Similarity		H2$a_{exercise_intent}$	✓		✓	
PSI		H2$b_{exercise_intent}$	✓	✓	✓	✓
Attitude toward the behaviour		H2$c_{exercise_intent}$	✓	✓	✓	✓
Attitude toward the brand		H3$_{exercise_intent}$				
Source credibility	Purchase intention	H1a/ $b_{purchase\_intent}$		✓(neg.)		
Attractiveness		H1$c_{purchase_intent}$				
Similarity		H2$a_{purchase_intent}$				
PSI		H2$b_{purchase_intent}$	✓	✓	✓	✓
Attitude toward the behaviour		H2$c_{purchase_intent}$				
Attitude toward the brand		H3$_{purchase_intent}$	✓		✓	✓

Note: ✓=supported hypothesis

Table 1 reports all results. Table 2 presents an overview of the supported hypotheses.

Results of study 1

In the following, we (1) report the factors that influence the attitude towards the influencer, (2) the factors that influence users' intention to exercise, and (3) the factors that impact brand purchase intention. Finally, we discuss the gender effects and role of brand familiarity in responding to our RQs. To reduce the complexity, we focus on the significant effects.

(1) Factors that influence attitude towards the influencer (influencer benefit): Attitude toward the influencer was influenced significantly by source credibility, regardless of the user or influencer gender (γ=.474–.796, all $p < .01$), confirming H1a/$b_{att\_influencer}$. The attitude toward the influencer was also increased by the influencer's attractiveness (γ=.248, $p < .01$) and by a perceived similarity (γ=.142, $p < .05$), when female users watched female influencers, partially confirming H1$c_{att_influencer}$ and H2$a_{att_influencer}$. Interestingly, the PSI yielded a significant, yet negative, impact on the attitude toward the influencer, when men watched the female influencer (γ=-.277, $p < .05$), rejecting

$H2b_{att\_influencer}$. Finally, the attitude toward the influencer was influenced by the attitude toward the behaviour, when female and male users watched a male influencer (female users: $\gamma=.429$, $p<.01$; male users: $\gamma=.322$, $p<.01$), partially supporting $H2c_{att\_influencer}$.

(2) Factors that influence users' intention to exercise (user health benefit): Users' exercise intentions were mainly increased by PSI ($\gamma=.222–.661$, $p<.05$ or .01) and the attitude toward the behaviour ($\gamma=.340–.670$, all $p<.01$), regardless of the user or influencer's gender, confirming $H2b_{exercise\_intent}$ and $H2c_{exercise\_intent}$. Users' exercise intentions were further increased by similarity when the user was female (female influencer: $\gamma=.227$, $p<.05$; male influencer: $\gamma=.215$, $p<.05$), partially confirming $H2a_{exercise\_intent}$. Finally, interestingly, men's exercise intentions were reduced by a higher source credibility of female influencers ($\gamma=-.316$, $p<.05$), rejecting $H1a/b_{exercise\_intent}$.

(3) Factors that influence the brand purchase intention (brand benefit): Brand purchase intentions were mainly increased by PSI, regardless of the user or influencer gender ($\gamma=.438–.695$, all $p<0.01$), supporting $H2b_{purchase\_intent}$, and by the attitude toward the brand ($\gamma=.191–.395$, $p<.05$ or .01; please note that male users' purchase intention also increased when the female influencer wore the brand, but the increase did not reach significance ($\gamma=.094$, n.s.)), mainly supporting $H3_{purchase\_intent}$. Finally, the purchase intention of male users was significantly reduced with the higher female influencer's source credibility ($\gamma=-.361$, $p<0.05$), rejecting $H1a/b_{purchase\_intent}$.

We performed pairwise parameter comparisons to check for significant differences between the path coefficients of the four groups using critical ratios for differences between parameters (z-value >|1.96|) indicating the significance of any pairwise comparisons.[63] Appendix 3 shows all the details for the pairwise comparisons.

Discussion of study 1

Results of study 1 (unfamiliar brand) suggest that for favourable attitudes toward fitness influencers, the influencer's *source credibility* is particularly important. For forming positive exercise intentions and thus increasing the user's health-related behaviour, *PSI* and *attitude toward the behaviour* are vital. For user's purchase intention, *PSI* is crucial, as is the *attitude towards the brand*, which increased users' purchase intentions (however, it was less pronounced when male users watched a female influencer). The analyses also produced some unexpected results, which we mainly explain by gender congruity or incongruity effects. We have discussed them in the following sections.

Gender congruity and incongruity effects. Whereas several key factors (i.e., influencer's source credibility, PSI, attitude toward the behaviour, and brand attitude) were important regardless of the user or influencer gender, we found some gender congruity and some gender incongruity effects: Attitude toward the influencer was only increased by *attractiveness* and *similarity* for female users and female influencers, suggesting a gender congruity effect for females. For males, attitude toward the influencer was only increased by the *attitude toward the behaviour* and purchase intention by *attitude toward the brand* in the gender-congruent constellation. An attitude increase toward the male influencer by female users' *attitude toward the behaviour* suggests a gender incongruity effect.

Three unexpected results were found in the group of female influencer/male users. Interestingly, men's exercise intention and their purchase intention were reduced with a higher *source credibility* of the female influencer; and men's *attitude toward the female influencer* was reduced by higher *PSI*. This constellation of female influencer/male users' needs further exploration. We discuss these findings in more detail in the discussion and limitations section.

Study 2

Design, stimuli selection and pre-tests

Study 2 aimed to provide empirical evidence for hypotheses 1–3 concerning *familiar* brands. As in study 1, we first conducted pre-tests to select the stimuli and test the questionnaire.

Pre-test 1. The first pre-test aimed to select the stimuli for study 2. The authors researched YouTube fitness clips featuring German fitness influencers (male/female) with a prominent brand promotion, again performing an abs exercise. Twenty-eight undergraduate students ($M_{age}=19.85$ years; 69.2% female) watched and discussed the selected fitness influencers' YouTube video clips. The final influencer set was evaluated as similarly trustworthy, expert, and attractive. The videos were 22 s long.

Pre-test 2. The second pre-test examined the suitability of the final set of selected stimuli (male and female version) and the comprehensibility of the questionnaire. 25 undergraduate students ($N=25$; $M_{age}=19.89$ years; 82.1% female) rated the stimuli as suitable and confirmed the questionnaire as comprehensible.

Manipulation check. Both influencers wore sportswear featuring the logo of a familiar brand (female influencer brand familiarity: $M=6.79$, $SD=.717$; male influencer brand familiarity: $M=6.81$, $SD=.610$; 7-point-Likert scale, 7 = highly familiar).

Participants and procedure

As in study 1, there was only minimal risk to participants in study 2. Participants were assured in writing that data

Table 3. Study 2: SEM results.

Path		H	Female influencer-Females (N = 135)	Female influencer-Males (N = 120)	Male influencer-Females (N = 137)	Male influencer-Males (N = 137)
Source credibility	Attitude toward the influencer	H1a/$b_{att\_influencer}$	0.485***	0.239***	0.568***	0.244**
Attractiveness		H1$c_{att_influencer}$	0.137**	0.544***	0.090	0.256**
Similarity		H2$a_{att_influencer}$	0.049	0.110	0.149	0.223**
PSI		H2$b_{att_influencer}$	0.159**	−0.054	−0.065	−0.037
Attitude toward the behaviour		H2$c_{att_influencer}$	0.182**	0.146**	0.309***	0.261**
Attitude toward the brand		H3$_{att_influencer}$	0.111	0.121	−0.033	0.048
Source credibility	Intention to exercise	H1a/$b_{exercise\_intent}$	−0.027	0.053	0.055	−0.148
Attractiveness		H1$c_{exercise_intent}$	−0.082	−0.075	−0.007	−0.042
Similarity		H2$a_{exercise_intent}$	0.297**	0.050	0.145	0.004
PSI		H2$b_{exercise_intent}$	0.231**	0.367**	0.275**	0.452***
Attitude toward the behaviour		H2$c_{exercise_intent}$	0.384***	0.469***	0.347***	0.446***
Attitude toward the brand		H3$_{exercise_intent}$	0.115	0.001	0.042	0.087
Source credibility	Purchase intention	H1a/ $b_{purchase\_intent}$	−0.079	−0.101	−0.007	0.152
Attractiveness		H1$c_{purchase_intent}$	0.008	−0.089	−0.163	0.033
Similarity		H2$a_{purchase_intent}$	−0.122	−0.050	0.352**	0.144
PSI		H2$b_{purchase_intent}$	0.257**	0.374**	−0.219	−0.229**

(continued)

Table 3. Continued.

Path	H	Female influencer–Females (N = 135)	Female influencer–Males (N = 120)	Male influencer–Females (N = 137)	Male influencer–Males (N = 137)
Attitude toward the behaviour	$H2c_{purchase\_intent}$	−0.124	0.113	0.140	0.093
Attitude toward the brand	$H3_{purchase\_intent}$	0.815***	0.629***	0.696***	0.620***
		x^2/df	TLI	CFI	RMSEA
Structural model study 2		1.750	.939	.926	.038

Note. *** p < 0.01; ** p < 0.05

Table 4. Study 2: Overview supported hypotheses.

		H	Female influencer–Females	Female influencer–Males	Male influencer–Females	Male influencer–Males
Source credibility	Attitude toward the influencer	H1a/$b_{att\_influencer}$	✓	✓	✓	✓
Attractiveness		H1$c_{att_influencer}$	✓	✓		✓
Similarity		H2$a_{att_influencer}$				✓
PSI		H2$b_{att_influencer}$	✓			
Attitude toward the behaviour		H2$c_{att_influencer}$	✓	✓	✓	✓
Attitude toward the brand		H3$_{att_influencer}$				
Source credibility	Intention to exercise	H1a/ $b_{exercise\_intent}$				
Attractiveness		H1$c_{exercise_intent}$				
Similarity		H2$a_{exercise_intent}$	✓			
PSI		H2$b_{exercise_intent}$	✓	✓	✓	✓
Attitude toward the behaviour		H2$c_{exercise_intent}$	✓	✓	✓	✓
Attitude toward the brand		H3$_{exercise_intent}$				
Source credibility	Purchase intention	H1a/ $b_{purchase\_intent}$				
Attractiveness		H1$c_{purchase_intent}$				
Similarity		H2$a_{purchase_intent}$			✓	
PSI		H2$b_{purchase_intent}$	✓	✓		✓(neg.)
Attitude toward the behaviour		H2$c_{purchase_intent}$				
Attitude toward the brand		H3$_{purchase_intent}$	✓	✓	✓	✓

Note: ✓=supported hypothesis

collection would be completely anonymous, that participation was completely voluntary, and that they could terminate the study at any time with no consequences. Here too, written consent was obtained from the participants before they started the survey. This study also meets the criteria of the European GDPR.

Similar to study 1, a 2 (male/female influencer) x 2 (male/female user) experimental design was employed to examine the effects of the proposed model (see Figure 1) for *familiar* brands. The requirements for participating in the study were the same as in study 1. Study 2 had a non-student sample of 529 participants (51.4% female, M_{age} =

30.05 years, from 18–68 years). Subjects were recruited from the German-speaking area by distributing the questionnaire online, also created with the online survey platform LimeSurvey and customised for mobile and computer devices, through email, social media (e.g., Facebook), and the paid online consumer panel ClickWorker. The study's procedure replicated study 1: Participants were randomly assigned to one YouTube fitness influencer video clip (female/male fitness influencer), were asked to watch the YouTube video clip (again, the survey continued only after the video was watched to ensure that all participants were exposed to the video for the same amount of time), and subsequently answered questions about it. Sociodemographic data (age, gender, and nationality) were gathered as well. Here, too, the survey was concluded with a debriefing and a word of thanks.

Measures

The measures were adopted from study 1. Appendix 4 reports all scale references, variable items, means, standard deviations, Cronbach α values, and Spearman-Brown coefficients. We performed factor analyses to confirm the one-dimensionality of the multi-item scales and conducted reliability analyses for all variables.

Similar to study 1, and as in Schouten, Janssen, and Verspaget,[54] trustworthiness and expertise formed a single factor (*source credibility*) that proved to be reliable (α=.940). The remaining factors *attractiveness* (α=.959), *similarity* (α=.896), *PSI* (α=.887), *attitude toward the behaviour* (α=.962), brand attitude (α=.952), *attitude toward the influencer* (α=.934), *intention to exercise* (Spearman-Brown coefficient = .959), and *purchase intention* (Spearman-Brown coefficient = .762) also achieved good reliability.

Statistical analyses

We performed a CFA using IBM SPSS AMOS 25. The overall model fit (x^2/df = 2.229, CFI = .968, TLI = .974, RMSEA = .050) and the local fit measures were acceptable.[53] Appendix 5 displays the AVE, composite reliability, indicator reliability and discriminant validity.[61]

A multi-group SEM[62] was conducted to simultaneously test the hypotheses. Again, we analysed four groups (male/female influencer x male/female user). The multi-group SEM generated an acceptable model fit (x^2/df = 1.750, CFI = .926, TLI = .939, RMSEA = .038).[59,60] Table 3 reports all results. Table 4 provides an overview of the supported hypotheses.

Results of study 2

Similar to study 1, herein we report (1) the factors affecting attitudes toward the influencer, (2) the factors affecting users' intentions to exercise, and (3) the factors affecting brand purchase intention. We have discussed gender effects and the role of brand familiarity to respond to the RQs. For reasons of clarity, we have only concentrated on the significant effects.

(1) Factors that influence attitude towards the influencer (influencer benefit): As in study 1, attitude towards the influencer was positively influenced by the source credibility (γ=.239–.568, p < .01 or .05), regardless of user or influencer gender, supporting H1a/$b_{att\_influencer}$. Attitude towards the influencer was also enhanced by the users' *attitude toward the behaviour* (γ=.146–.309, p < .01 or .05), again regardless of the user or influencer gender, supporting $H2c_{att\_influencer}$. Attitude towards the influencer was increased by the female influencer's *attractiveness* for male and female users (γ=.137–.544, p < 0.01 or .05), and by the male influencer's *attractiveness* for male users (γ=.256, p < .05), mainly supporting $H1c_{att\_influencer}$. While the attitude towards the male influencer was enhanced by men's perceived *similarity* (γ=.223, p < .05), partly supporting $H2a_{att\_influencer,}$ the attitude towards the female influencer was increased by women's *PSI* (γ=.159, p < .05), partly supporting $H2b_{att\_influencer}$.

(2) Factors that influence users' intention to exercise (user health benefit): As in study 1, users' intention to exercise was significantly increased by PSI (γ=.231–.452, all p > .05) and also as in study 1 by the attitude toward the behaviour (γ=.347–.469, p < .01 or p < .05), regardless of user or influencer gender, supporting $H2b_{exercise\_intent}$ and $H2c_{exercise\_intent}$. Female users' exercise intention was again increased by the similarity when the influencer was female (γ=.297, p < .05), partially supporting $H2a_{exercise\_intent}$.

(3) Factors that influence brand purchase intention (brand benefit): As in study 1, purchase intention of the brand was increased by the *attitude toward the brand*, regardless of the user or influencer gender (γ=.620 to .815, all p < .01), confirming $H3_{purchase\_intent}$. Women's purchase intention was positively influenced by the *similarity* when the influencer was male (γ=.352, p < .05), partially supporting $H2a_{purchase\_intent}$. Male and female users' purchase intention was increased by the *PSI* when the influencer was female (γ=.257–.374, all p < .05). However, men's purchase intention was significantly reduced with a higher male influencer's *PSI* (γ=-.229, p < .05), thus $H2b_{purchase\_intent}$ was only partially supported for the female influencer.

As in study 1, we conducted pairwise parameter comparisons to test for significant differences across the proposed path relationships of the four groups, using critical ratios for differences between parameters at (z-value >|1.96|).[63] Appendix 6 displays the results in detail.

Discussion of study 2

Similar to the results of study 1 (unfamiliar brand), the results of study 2 (familiar brand) imply that for favourable

attitudes toward the influencer, the influencer's source credibility and attitude toward the behaviour are crucial. Attractiveness increased favourable attitudes toward the influencer, except for women watching a male influencer. As in study 1, for exercise intentions, the *PSI* and attitude toward the behaviour are the strongest predictors. For users' purchase intentions, the attitude toward the brand is important, mirroring the results of study 1. Some unexpected results occurred in this study as well, which are explained by gender congruity or incongruity effects discussed in detail below.

Gender congruity and incongruity effects. While some key factors (i.e., source credibility, attitude toward the behaviour, exercise intentions, and brand attitude) emerged as important regardless of the user or influencer gender, we also found gender congruity and incongruity effects: For women, the attitude toward the female influencer was positively increased by her perceived *attractiveness*, intention to exercise was positively affected by a perceived *similarity* to the female influencer and purchase intention by the *PSI* with the female influencer, suggesting gender congruity scenarios. For men, attitude towards the male influencer was increased by the *attractiveness* and perceived similarity, implying gender-congruent effects. Men's purchase intentions were increased by the perceived *PSI* with the female influencer, suggesting a gender-incongruent constellation.

One unexpected result emerged in the group of male influencers and male users. Men's purchase intentions were reduced with a higher PSI with the male influencer. More research is needed to explore the constellation of influencers/male users. The discussion and implications section presents these results in detail.

General discussion and implications

This research examined whether consumer perceptions of fitness influencers as digital health communicators on the YouTube platform affect users' attitudes, exercise intentions, and purchase intentions. We analysed this question comprehensively from three perspectives by focusing on important variables in influencer research to assess their influence on the users' attitude toward the influencer (influencer benefit), users' intention to exercise (user health benefit), and purchase intention (brand benefit). Furthermore, we analysed whether the influencer and user gender and different brand placements (familiar vs. unfamiliar brand) impact the proposed relationships. Our aim was to identify, among major influencer variables that have been identified in the literature, the most important ones for each perspective (user health, influencer, and brand).

Our findings from two empirical studies shed light on how consumers evaluate fitness influencers, what fitness influencer characteristics are important to stimulate exercise and purchase behaviours, and the role of unfamiliar and familiar brands in fitness influencers' YouTube exercise videos in driving consumer attitudes and behavioural intentions. This study contributes to influencer marketing research, the growing body of research on central fitness influencer and consumer characteristics, the role of different brand placements, and factors influencing behavioural intentions in health, fitness, and well-being.[14,22]

Similarities in both studies. In both studies, several key influencing factors emerged in all groups.

(1) Factors that influence attitude towards the influencer (influencer benefit): The results of our two studies posit that the attitude toward the influencer might be increased in particular by the source credibility. This finding contributes to the understanding of antecedents of consumer attitude formation as it corroborates the previous research that identified the source credibility as a key influencer characteristic with positive effects on the attitude.[2,54] Extending the current knowledge, our study indicates that this finding appears to hold true for YouTube fitness influencers, regardless of the influencer's or user's gender. The results are also not influenced by the *familiarity* of the brand worn by the influencer when demonstrating the exercise.

(2) Factors that influence users' intention to exercise (user health benefit): Our results indicate that exercise intentions are affected by the consumers' perceived PSI with fitness influencers and attitude toward the behaviour in both studies. Prior research on media figures found that viewers were more likely to adopt the attitudes and behaviours of TV characters with whom they have parasocial relations.[64] This effect also appears to have occurred for YouTube fitness influencers and confirms the suggestion of Sokolova and Perez[3] that followers who have developed a stronger PSI with the fitness influencer are more willing and motivated to exercise with the influencer. Hence, this research identifies fitness influencers with a high PSI as effective digital health communicators to encourage followers to become more active and thus positively contribute to the WHO's goal of increasing physical activity.[9,10] Exercise intention was also successfully predicted by the attitude toward the behaviour, as proposed by the TPB.[36] The abs exercise behaviour demonstrated in the video evoked positive attitudes toward the behaviour regardless of the person emulating it, thus promoting users' exercise intention. Our study again extends previous research by showing that the results apply to all groups, regardless of user or influencer gender and the level of endorsed brand familiarity.

(3) Factors that influence brand purchase intention (brand benefit): Purchase intention was largely influenced by the consumers' brand attitude. Previous research found positive relationships between brand attitude for familiar brands and purchase intentions,[25] but our research extends this

relationship to fitness influencers endorsing both familiar and unfamiliar brands. Fitness influencers seem to represent a suitable approach for both brand scenarios to increase purchase intentions for the promoted brand, but our results are particularly interesting for unfamiliar brands since they are assumed to benefit especially from influencer collaborations.

The perceived PSI might also significantly increase the purchase intention,[46] particularly for the unfamiliar brand. This result is interesting for unfamiliar brands since they are assumed to benefit especially from influencer collaborations.[20] Our study seems to confirm Hudders and Jans'[20] assumption that unfamiliar brands in particular might benefit from influencer marketing considering the PSI. Hence, for unfamiliar brands, working with fitness influencers might be a promising marketing strategy.

Differences in both studies. While our results indicate many similarities for the three benefits in both studies, there were also a few differences.

In the familiar brand scenario, the attitude toward the influencer was affected by the attitude toward the behaviour (in all groups) and the perceived attractiveness of the influencer (in three out of four groups). In the unfamiliar brand scenario, in contrast, the attitude toward the influencer was only influenced by the attitude toward the behaviour when men and women watched the male influencer (two out of four groups) and only by the perceived attractiveness in the female influencer/women constellation. Influencers' attractiveness and, consequently, attitudes toward them might thus benefit in particular from the image of the familiar, well-known brand. As discussed in our theoretical part in the context of the meaning transfer model,[38] this could indicate that not only brands but also influencers might benefit from the familiar brand's image.

Gender congruity and incongruity effects. As outlined above, several factors were relevant in all groups, indicating gender congruity and incongruity effects. Our studies found more gender congruity effects than gender incongruity effects, implying that choosing gender-congruent influencers according to one's target group might be beneficial for influencer marketing. For women, it is important that the female influencer is attractive, similar to themselves, and evokes a parasocial interaction with them. The attitude toward the female influencer was positively influenced by her perceived attractiveness in both studies. Additionally, women's perceived similarity to the female influencer has more positive effects than the perceived similarity to the male influencer. In line with the social identity theory, the congruent gender may have reinforced perceptions of the source as similar and attractive, boosting positive evaluations of the fitness influencer.[35,65] Particularly for the intention to exercise, similarity is highly important for women in both studies. Concerning PSI, the imagined bond between women and the female influencer might have been enhanced by their high congruity, increasing the influencer's efficacy.[65]

For men, the attitude toward the behaviour is highly important for the attitude toward the male influencer as is the attitude toward the brand for the purchase intention in the male influencer scenario. In the familiar brand scenario, the perceived attractiveness and familiarity of the male influencer were important to men's attitudes toward the influencer.

All four unexpected results occurred in the male user group and were related to the variables' source credibility of the female influencer and PSI with the male and female influencer. In study 1, men's attitude toward the female influencer was negatively affected by their perceived PSI. One explanation could be that male social media users are less likely to interact with influencers and form parasocial relationships,[20] making PSI less important for certain reactions to influencers. In study 2, men's PSI with the male influencer negatively influenced the purchase intention for the familiar brand. This is surprising as previous research suggested the positive effects of PSI on purchase intentions.[35,46] Both results need further investigation.

Female influencer's source credibility negatively influenced men's exercise and purchase intentions. The negative effect of the female influencer's credibility on men's purchase intentions could be explained by men's tendency to react more negatively to products with a feminine image.[20,66] An unfamiliar brand worn by the female influencer might have evoked, or even strengthened, men's perception of the brand as feminine, thus negatively influencing their reactions.

Practical implications

The results of our studies have implications for practice, as fitness influencers might indeed be effective digital health communicators that could contribute to increased physical activity. Videos by fitness influencers on YouTube might help in increasing the users' physical activity behaviour, and thus positively contribute to their health by providing another way to become physically active at home, as an alternative to the gym.[3] The use of YouTube fitness videos is rather easy as videos are available 24/7, typically free of charge, viewable on stationary or mobile devices, etc., and so users have an easy access.

When the main goal is to foster the intention to exercise, a high similarity, high PSI and positive attitude towards the behaviour are the most important variables on which influencers should focus. A focus on the PSI is also important if influencers want to increase their followers' purchase intentions for the promoted products. Measures to increase the PSI include actively engaging with users, emphasising their importance to the influencer, and responding to their comments in a friendly and caring way. Since the attitude

towards the brand is vital for brand purchase intentions, influencers and companies should try to ensure that there is a high fit between the brand and the main target group that the influencer addresses (see also Campell and Farrell[13]). Influencers were in particular prone to increase purchase intentions for unfamiliar brands. Companies with fitness-related brands might particularly turn to fitness influencers if they want to promote unfamiliar brands to customers to increase brand awareness and brand purchase intentions.

Influencers appear to be effective brand ambassadors for campaigns that have both commercial and health objectives and could therefore be suitable for multipurpose campaigns, even for smaller brands.

Lastly, gender-congruent endorsements appear to be more effective in a YouTube fitness influencer setting. Thus, it might be more effective for brand marketers to choose gender-congruent influencers in line with the target audience, i.e., a female influence for a female target group.

Limitations and suggestions for future research

Our study makes important contributions to the emerging research field of fitness influencers, influencer marketing, and gender, but some limitations need to be addressed. In this research, the attitude toward the influencer was predicted by source credibility. Exercise intentions were predicted by the PSI and attitude toward the behaviour. Purchase intention was largely predicted by the brand attitude. Besides these important variables and other variables employed in this study, there may be additional variables that impact consumers' attitudes and intentions, for instance, self-efficacy.

We included influencer gender as a moderator in our model and found gender-related differences among the four groups. Some results were surprising and prompted speculations about the underlying mechanisms, in particular to the relation to men's PSI and the perceived source credibility of female influencers. We propose to explore these reasons in more detail to gain a more comprehensive understanding, e.g., using qualitative research methods.

Though we took several measures to reduce it, there is a chance of a respondent selection bias in our samples. To reduce the selection bias, we employed random sampling, ensured rather large sample sizes, and aimed for a broad age range and an equal gender distribution. We also checked for the respondents' usage of YouTube fitness videos. The analysis shows that the samples include respondents with different usage frequencies of YouTube fitness videos. Nevertheless, it would be desirable to examine the models with an additional, larger and representative sample. For both studies, we employed self-report measures, which are considered one of the most informative and valid data sources for assessing individual psychographic variables.[67] However, these methods carry the risk of common method bias (CMB). To avoid CMB, we assured participants of confidentiality and explained that there were no right or wrong answers to the questions. We avoided items that could be regarded as ambiguous or vague and kept the questionnaire and items as concise as possible.[68,69] Future research could employ other methods (e.g., secondary data sources and qualitative methods) to support our findings. Our model consists of well-established and thoroughly researched theories and relationships.[14] Nonetheless, we used cross-sectional data. Therefore, longitudinal studies, for example, are needed to confirm our results.

While our study set-up ensured that all participants were exposed to the stimulus videos for the same amount of time before responding to the questionnaire, we were not able to fully control the viewing situation. For instance, we do not know whether the respondents' gaze was directed at the screen throughout the video or whether it was averted in between. We suggest that future studies might want to use eye tracking[70] or observational methods to corroborate our findings.

Furthermore, the proposed fitness influencer model was examined in the German-speaking area with German influencers. Future studies might want to examine the proposed model with different influencers in different countries to gain an international perspective on our findings. In addition, fitness activities other than abs exercises could be assessed due to the large number of fitness videos available on YouTube. Besides, considering the YouTube platform, video metrics, such as views, upload date, engagement, and other creator contents could be taken into consideration,[71] and also the analysis of other platforms, such as Instagram, might be interesting.

Conclusion

This research suggests that fitness influencers who exhibit certain key characteristics can be considered effective digital health communicators not only for encouraging physical activities but also for brand-related purposes. They can impact men's and women's attitudes toward the influencer, exercise intentions, and purchase intentions for unfamiliar and familiar brands in different ways. This research identifies the most important variables for the perspectives (1) influencer, (2) user health, and (3) brand: Attitudes toward the influencer were particularly influenced by the influencer's source credibility. Respondents' exercise intentions were affected by the PSI and attitudes toward the behaviour and users' purchase intentions were especially influenced by the attitude toward the brand. The studies revealed gender-congruent and non-congruent tendencies for female and male respondents and different effects of unfamiliar and familiar brands.

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Appendices

Appendix 1. Study 1. Variables with means and standard deviations

		Total sample (N = 496)		Women (N = 259)		Men (N = 237)	
Variables and items		M	SD	M	SD	M	SD
Source credibility[a] (α=.956)		4.62	1.439	4.65	1.412	4.58	1.470
The influencer is	sincere						
	reliable						
	experienced						
	qualified						
	skilled						
Attractiveness[a] (α=.949)		3.94	1.630	3.89	1.517	3.99	1.748
The influencer is	beautiful						
	attractive						
	sexy						
Similarity[b] (α=.913)		2.95	1.352	2.81	1.305	3.10	1.388
The influencer	is similar to me						
	is like me						
	shares my values						
	has a lot in common with me						
PSI[b] (α=.906)		2.33	1.467	2.21	1.445	2.45	1.484
I think the YouTube influencer is like a friend to me.							
The influencer could be a friend of mine.							
When I'm watching the YouTube fitness influencer, I feel as if I am part of his/her group.							
Attitude toward the behaviour[c] (α=.962)		4.17	1.653	4.23	1.665	4.11	1.640
I find performing a workout with this YouTube fitness video	good						
	positive						
	pleasant						

(continued)

Appendix 1. Continued.

Variables and items		Total sample (N = 496)		Women (N = 259)		Men (N = 237)	
		M	SD	M	SD	M	SD
Attitude toward the brand[c] (α=.954)		3.69	1.217	3.70	1.215	3.68	1.222
I find the brand X	good						
	positive						
	pleasant						
Attitude toward the influencer[c] (α=.947)		4.69	1.406	4.66	1.413	4.73	1.401
The influencer is	good						
	positive						
	pleasant						
Intention to exercise[d] (Spearman-Brown coefficient = .956)		2.64	1.788	2.63	1.751	2.65	1.832
I intend to exercise with this YouTube fitness video within the next month.							
It is very likely that I will exercise with this YouTube fitness video within the next month.							
Purchase intention[e] (Spearman-Brown coefficient = .877)		2.43	1.425	2.44	1.437	2.42	1.414
It is very likely that I will buy a product of the brand X.							
I will purchase a product of the brand X the next time I need sports apparel.							

Note: Items were measured on a 7-point Likert scale (1='do not agree at all'; 7='totally agree').
[a]based-on Ohanian[17]
[b]adapted from Lee and Watkins[55]
[c]adapted from MacKenzie and Lutz[56]
[d]adapted from Ajzen[57]
[e]adapted from Putrevu and Lord[58]

Appendix 2. Study 1. Reliability and validity measures for variables (CFA), discriminant validity and squared construct correlations

	Construct	Indicator reliability	Comp. reliability	AVE	Fornell-Larcker	1	2	3	4	5	6	7	8	9
1	Source_credibility	0.731–0.956	0.960	0.830	0.826	0.911								
2	Attractiveness	0.799–0.933	0.952	0.864	0.350	0.468	0.930							
3	Similarity	0.606–0.799	0.920	0.742	0.616	0.538	0.510	0.861						
4	PSI	0.699–0.744	0.888	0.725	0.631	0.444	0.377	0.676	0.851					
5	Attitude_behaviour	0.856–0.923	0.963	0.896	0.614	0.679	0.419	0.637	0.497	0.947				
6	Attitude_brand	0.828–0.925	0.954	0.875	0.321	0.377	0.271	0.438	0.459	0.409	0.935			
7	Attitude_influencer	0.846–0.858	0.946	0.853	0.804	0.828	0.550	0.596	0.430	0.742	0.386	0.924		
8	Intention_to_exercise	0.898–0.933	0.956	0.915	0.511	0.488	0.302	0.637	0.658	0.409	0.530	0.497	0.957	
9	Purchase_intention	0.734–0.831	0.874	0.776	0.648	0.347	0.287	0.514	0.709	0.684	0.389	0.291	0.547	0.881

Note. AVE = average variance extracted.

Appendix 3. Study 1. Critical ratios (C.R.)

Path		Group 1 x Group 2	Group 1 x Group 3	Group 1 x Group 4	Group 2 x Group 3	Group 2 x Group 4	Group 3 x Group 4
Source_credibility	Attitude influencer	1.154	.136	.240	−.936	−.778	.106
Attractiveness		−1.379	−.680	−2.160	.424	−1.075	−1.259
Similarity		−.286	−1.520	−.344	−1.024	−.018	1.113
PSI		−2.196	−1.031	1.488	.909	3.369	2.165
Attitude_behaviour		−.299	3.153	2.089	2.974	2.104	−.507
Attitude_brand		−.114	.725	.459	.780	.531	−.230
Source_credibility	Intention to exercise	−1.044	1.763	.430	2.501	1.213	−.914
Attractiveness		−.166	−.274	−.758	.070	−.688	−.657
Similarity		−.693	−.104	−.741	.595	−.038	−.641
PSI		2.798	1.048	−.168	−1.552	−2.853	−1.161
Attitude_behaviour		−.171	−1.283	1.431	−.999	1.488	2.364
Attitude_brand		−.138	.153	−.065	.290	.053	−.195
Source_credibility	Purchase intention	−1.321	1.298	1.550	2.410	2.514	.444
Attractiveness		−620	.507	−.233	1.146	.293	−.691
Similarity		.497	−.803	.602	−1.243	.081	1.377
PSI		1.102	1.067	.231	.021	−.877	−.854
Attitude_behaviour		−.112	−2.038	−1.876	−1.820	−1.721	−.252
Attitude_brand		−2.789	−.346	−1.513	2.421	.997	−1.189

Appendix 4. Study 2. Variables with means and standard deviations

	Total sample (N = 529)		Women (N = 272)		Men (N = 257)	
Variables and items	M	SD	M	SD	M	SD
Source credibility[a] (α=.940)	4.60	1.346	4.65	1.345	4.55	1.347
Attractiveness[a] (α=.959)	4.11	1.889	4.06	1.870	4.17	1.911
Similarity[b] (α=.896)	2.00	1.353	1.97	1.423	2.03	1.277
PSI[b] (α=.887)	2.33	1.467	2.21	1.445	2.45	1.484
Attitude toward the behaviour[c] (α=.962)	3.91	1.763	3.98	1.769	3.85	1.757
Attitude toward the brand[c] (α=.952)	3.69	1.217	3.70	1.215	3.68	1.222
Attitude toward the influencer[c] (α=.934)	4.48	1.45	4.46	1.398	4.51	1.475
Intention to exercise[d] (Spearman-Brown coefficient = .959)	2.32	1.721	2.42	1.841	2.21	1.581
Purchase intention[e] (Spearman-Brown coefficient = .762)	4.48	1.616	4.44	1.533	4.52	1.702

Note. For detailed items, see Appendix 1. Items were measured on a 7-point Likert scale (1='do not agree at all'; 7='totally agree').
[a]based-on Ohanian[17]
[b]adapted from Lee and Watkins[55]
[c]adapted from MacKenzie and Lutz[56]
[d]adapted from Ajzen[57]
[e]adapted from Putrevu and Lord[58]

Appendix 5. Study 2. Reliability and validity measures for variables (CFA), discriminant validity and squared construct correlations

	Construct	Indicator reliability	Comp. reliability	AVE	Fornell-Larcker	1	2	3	4	5	6	7	8	9
1	Source_credibility	0.598–0.879	0.940	0.759	0.704	0.871								
2	Attractiveness	0.815–0.897	0.961	0.890	0.521	0.481	0.943							
3	Similarity	0.520–0.759	0.902	0.701	0.559	0.368	0.461	0.837						
4	PSI	0.617–0.711	0.861	0.675	0.597	0.295	0.314	0.626	0.822					
5	Attitude_behaviour	0.850–0.940	0.963	0.897	0.465	0.585	0.485	0.533	0.482	0.947				
6	Attitude_brand	0.858–0.889	0.953	0.870	0.617	0.227	0.115	0.116	0.161	0.199	0.933			
7	Attitude_influencer	0.811–0.834	0.934	0.825	0.648	0.731	0.681	0.483	0.393	0.646	0.251	0.908		
8	Intention_to_exercise	0.915–0.929	0.959	0.922	0.448	0.385	0.333	0.550	0.635	0.643	0.197	0.453	0.960	
9	Purchase_intention	0.539–0.702	0.767	0.623	0.862	0.189	0.029	0.170	0.204	0.201	0.733	0.158	0.184	0.789

Note. AVE = average variance extracted.

Appendix 6. Study 2. Critical ratios (C.R.).

Path		Group 1 x Group 2	Group 1 x Group 3	Group 1 x Group 4	Group 2 x Group 3	Group 2 x Group 4	Group 3 x Group 4
Source_credibility	Attitude influencer	−1.918	.608	−1.687	2479	.022	−2.201
Attractiveness		3.795	−.758	.717	−4.971	−3.267	1.615
Similarity		.537	.890	1.447	.416	.829	.280
PSI		−1.599	−1.708	−1.647	−.093	.143	.245
Attitude_behaviour		−.416	.862	.386	1.367	.790	−.386
Attitude_brand		.093	−1.791	−.842	−1.726	.864	.926
Source_credibility	Intention to exercise	.720	.708	−1.010	−.032	−1.745	−1.760
Attractiveness		.193	.789	.584	.600	.387	−.285
Similarity		−1.782	−.802	−2.446	.661	−.334	−1.000
PSI		.887	.423	1.429	.387	.255	.699
Attitude_behaviour		.083	−.0992	−.561	−1.160	−.692	.451
Attitude_brand		−1.164	−.910	−.635	.361	.708	.369
Source_credibility	Purchase intention	−.515	.496	1.753	.895	1.935	1.285
Attractiveness		−.803	−1.054	.198	−.044	.953	1.226
Similarity		.202	2.289	1.746	1.779	1.131	−.955
PSI		1.401	−2.344	−3.128	−2.856	−3.319	−.254
Attitude_behaviour		1.700	1.699	1.375	−.195	−.269	−.103
Attitude_brand		.454	−.954	−.629	−1.264	−.996	.376