

Research Report

The Ambivalent Role of Social Aspects in Health Promotion

DOI: 10.47368/ejhc.2022.309
2022, Vol. 3(3) 180-190
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Abstract

Through various mechanisms such as social comparison, social control, and social support, social networks may impose both positive and negative effects on people's health. The purpose of this brief research report is to highlight the role of social aspects in health promotion in the context of evidence-based communication strategies to promote physical activity among older adults in Germany. Results are based on a two-study formative research project, combining 20 semi-structured interviews with a telephone survey of a representative sample of 1,001 older adults. They show that interpersonal communication is an important source of health information. However, a strong normative influence of the social network may also undermine self-determined motivation to be physically active and therefore decrease activity levels in the long-term. In contrast, feeling related to others and being able to exercise together with other people can facilitate physical activity for older adults, which underlines the ambivalent role of social aspects. Hence, (interpersonal) communication aiming at the promotion of physical activity among older adults should support their perceived autonomy by explaining potential health and social consequences of the behaviour, providing choices, and acknowledging individual barriers and facilitators such as (lack of) sports companions.

Keywords

Health promotion, social influence, interpersonal communication, subjective norms, evidence-based health communication.

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Individuals' social networks can have both positive and negative effects on health-related outcomes. This can be explained by various mechanisms. Social comparison or social control, for example, may exert ambivalent influences on health outcomes (Thoits, 2011)—while social comparison gives normative and behavioural guidance, reference groups may model either risky or preventive behaviour. Social control covers attempts to monitor, encourage, persuade, remind, or pressure a person to adopt or adhere to positive health practices, but these attempts can also backfire if they are perceived as overly intrusive. This ambivalent role of social aspects is also reflected in Rook's (2015) conceptualization of positive and negative social network exchanges affecting the health and well-being of older adults. She points out that positive interactions such as support may also lead to feelings of indebtedness, a reduced sense of self-efficacy, and feelings of constraint, therefore impairing one's health and well-being.

Social Aspects in Health Promotion

Literature on the role of social relations in health promotion, the focal area of this report, often highlights the positive aspects of social networks (e.g., Barragan, 2021; Berkman, 1995; Donev et al., 2008). By combining the aforementioned knowledge of ambivalent social influences on health outcomes with insights from research on health campaigns, we provide a broader picture of how positive and negative social aspects should be considered in health promotion. We illustrate this by referring to the results of a formative research project on communication strategies to promote physical activity of older adults in Germany.

In the context of health campaigns, social aspects may play a role in at least two different ways. Firstly, interpersonal communication can increase the reach of mass-media campaigns through follow-up communication and either reinforce or undermine persuasive effects (Jeong & Bae, 2018). Secondly, social appeals can be used as a message strategy to influence health behaviour (Reifegerste, 2016). This is especially promising if formative research in the campaign planning process identifies social aspects as relevant behavioural determinants. In general, these two aspects, i.e., the identification of adequate communication channels and effective messages, are key concepts of evidence-based planning of health campaigns (Silk et al., 2011). Against this background, the purpose of this brief research report is to highlight the role of social aspects in health promotion in the context of evidence-based planning of a communication strategy to promote physical activity among older adults in Germany; specifically with regards to appropriate communication channels with a focus on interpersonal communication, and adequate messages. Accordingly, our first research question is:

RQ1: What role does interpersonal communication with formal and informal health information sources play in the health information behaviour of older adults in Germany?

Determinants of Physical Activity

To promote a target behaviour, adequate campaign messages have to be identified based on relevant behavioural determinants and their underlying beliefs (Rossmann, 2013). In recent years, ecological models have become more popular to grasp the full spectrum of potential influences on physical activity. Such models go beyond individual or intrapersonal determinants (e.g., behavioural, psychological determinants) and further include influences on interpersonal (e.g., peer, family), environmental (e.g., access to facilities, natural surroundings) and policy (e.g., organisational, governmental) levels (Sallis et al., 2006). However, after a large European project assessing determinants of physical activity and dietary behaviour

(DEDIPAC; Brug et al., 2017) identified over 180 factors influencing physical activity based on expert ratings and empirical evidence, a concept mapping study within the same project showed mainly intrapersonal factors to be both impactful and modifiable (Condello et al., 2016). This is in line with the observation that despite the many potential factors on different levels, psychological factors were observed to be direct determinants of maintaining physical activity (Cortis et al., 2017; Bauman et al., 2012). Furthermore, an umbrella systematic review on psychological determinants of physical activity found that, while the majority of considered determinants showed probable yet limited influences, determinants grounded in theory promised to be more fruitful. Hence, the authors concluded that “the differences in the predictive value of psychological determinants seem to be most informative when referring to several theories and models used to explain human behaviours” (Cortis et al., 2017, p. 20). Thus, in addition to the interpersonal level, we examine factors relevant on the individual, psychological level. Specifically, we refer to the Theory of Planned Behaviour (TPB; Ajzen & Fishbein, 2010) as the core model, because it is one of the most prominent theories for predicting health behaviour and has successfully been used to inform behaviour change interventions. In their three-level meta-analysis, Steinmetz et al. (2016) confirmed the effectiveness of TPB-based interventions for several health domains, including physical activity. However, research has also shown that physical activity is not solely determined by the strength of behavioural intention (as usually measured in the TPB) but also by its self-determination, i.e., the level of intrinsic vs. extrinsic motivation, also referred to as “self-concordance of intention” (Fuchs et al., 2017). Therefore, we integrated the TPB with the Self-Determination Theory (Deci & Ryan, 2000). Specifically, we enclosed self-concordance as a further behavioural determinant (on the same level as behavioural intention) in our research model (see Figure 1; Stehr, Rossmann, et al., 2021).

The TPB postulates that behavioural intentions are influenced by subjective norms, attitudes, and perceived behavioural control, which in turn are shaped by corresponding beliefs. Research on the determinants of physical activity among older adults often shows significant effects for attitudes and perceived behavioural control, but not for subjective norms (Alexandris et al., 2007; Gretebeck et al., 2007). Nevertheless, normative appeals are often used to promote health behaviours (Reifegerste, 2016). Moreover, subjective norms may be closely linked to extrinsic motivation of physical activity (Brickell et al., 2006). Given this contradictory evidence in the context of physical activity, our second open research question is:

RQ2: To what extent are subjective norms of German older adults related to the strength and self-concordance of their intention to be physically active?

Social appeals cover more than normative appeals and may also be addressed to social conditions and consequences of the health behaviour (Reifegerste, 2016), such as being active within a group of people or supporting each other in health-oriented behaviour. These messages should be developed according to the underlying beliefs of the behaviour’s determinants. Therefore, our third research question is:

RQ3: Which social aspects of their beliefs influence the determinants of German older adults’ intention to be physically active?

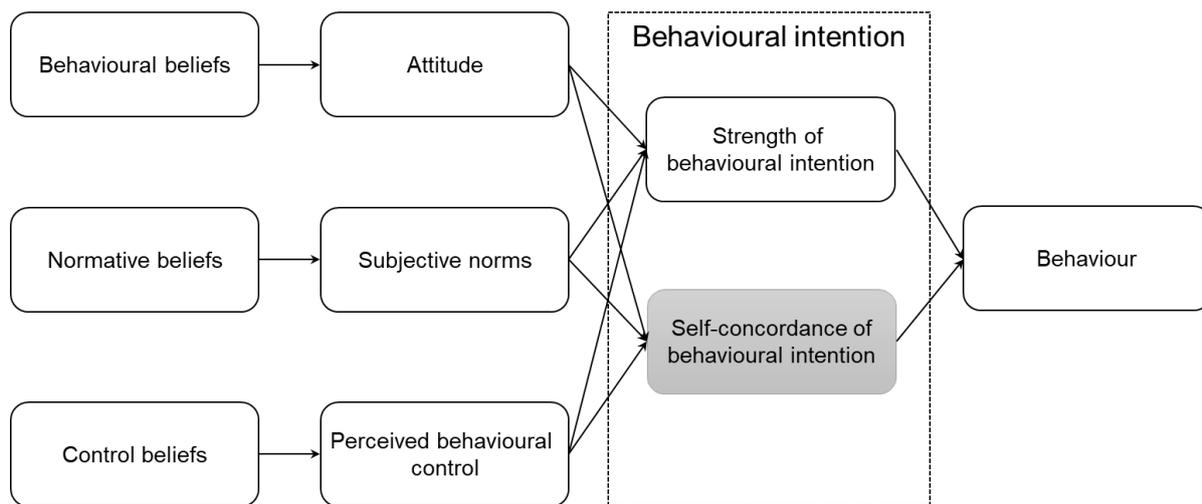


Figure 1. Research Model of Determinants of Physical Activity

Note. Integration of self-concordance of behavioural intention into a TPB-based model.

Method

To answer these research questions and provide the evidence base for the communication strategy, two studies were combined – semi-structured interviews and a standardised telephone survey. Results of this two-study formative research project have been previously published with detailed descriptions of the sampling strategies and analytical approach of both studies (Stehr, Lütke Lanfer, & Rossmann, 2021; Stehr, Rossmann, et al., 2021; Stehr, Weber, & Rossmann, 2021). In this brief research report, we present an additional overarching analysis of the role of social aspects in health promotion. These social aspects comprise (1) interpersonal communication with formal and informal health information sources, (2) the relevance of subjective norms as a determinant of health behaviour, and (3) social aspects of underlying behavioural, and control beliefs.

Samples

Study 1. The sample of the semi-structured interviews consisted of ten women and ten men aged 65 years and older. We purposefully included older adults with a migrant background and a low socio-economic status (income below 1,000 € per month, no academic educational background) in our sample. Older people with a migrant background were included in our sample for two reasons. First, older people with migration experience represent an increasing proportion of the German population, with approximately 16 % (Federal Agency for Civic Education, 2020). Second, migration experience is considered a social determinant of health, especially among older people who may experience language barriers and are at risk of poverty and lack of social support and thus require strategies targeting their cultural and socioeconomic needs (Kristiansen et al., 2016).

Study 2. For the standardised survey, a sample of 1,001 German older adults (50.5% female) between 65 and 96 years ($M = 74.5$, $SD = 6.1$) was recruited through random digit dialling. The sample was representative of the German population 65+ in terms of age and gender. Further details on participant characteristics and the sampling strategies of both studies can be found

in Stehr, Lütke Lanfer, & Rossmann (2021), Stehr, Rossmann, et al. (2021), and Stehr, Weber, & Rossmann, (2021).

Procedures and Data Analyses

Study 1. Participants of the semi-structured interviews were questioned individually in their homes or at a mutually convenient location. Our theory-based interview guide included a set of main questions as well as prompts regarding the older adults' health information behaviour, past and future physical activity, and TPB beliefs. Participants received both verbal and written information about the project and gave written consent. All participants received 20 Euros as an incentive but could withdraw from the project at any time without any explanation. Names of individuals and places were removed to anonymize the interview transcripts. Interviews ranged from 30 to 60 minutes, were conducted and transcribed in July 2018, and analysed using qualitative content analysis with a deductive-inductive approach. A first coding frame was built from our theory-based research interest with deductive main categories for each topic. New subcategories (inductive coding) were identified from the data. Data saturation, i.e., the point at which no new themes emerged, was reached after approximately four fifths of the interviews. Nonetheless, all interviews were coded to gain a better understanding of the target group and their views. Data was coded by two of the authors and different stages of refinement of the coding frames were thoroughly discussed with the other authors.

Study 2. The standardized data was collected through computer-assisted telephone interviews (CATI) in October 2018. Participants gave consent prior to anonymously answering the survey (the questionnaire and data are openly available <https://doi.org/10.17605/OSF.IO/E856U>). TPB constructs (attitudes, perceived behavioural control, subjective norms, and intention strength) were measured according to the recommendations of Ajzen (2019), while self-concordance of intention was assessed using a scale developed by Seelig and Fuchs (2006) in the context of physical activity. We decided which health information sources were surveyed for frequency of use in the standardised survey based on the qualitative results. Similarly, the questionnaire items measuring beliefs were formulated based on the sub-dimensions identified in the qualitative interviews and specific statements made by the participants. Prior to analysing the path model, measurement models were tested, and indicator reliability, composite reliability, convergence validity, and discriminant validity were ensured (Stehr, Rossmann, et al., 2021). Various statistical analyses were used to answer the research questions: descriptives for RQ1, structural equation modelling (PLS approach) for RQ2, and multiple regressions for RQ3.

Results

Interpersonal Communication as Health Information Sources (RQ1)

During the semi-structured interviews, participants referred to various interpersonal sources of health information comprising informal as well as formal contacts. Results of the standardised survey show that older adults rarely or only once in a while retrieve information on health and physical activity. Within this low usage frequency, there are some sources that are used more often than others. Beyond mass media such as radio, television, and newspapers, those sources also comprise interpersonal communication with family and friends as well as health

professionals (see Figure 2). Particularly men rely on interpersonal communication with health professionals for information on health and physical activity (Stehr, Weber, & Rossmann, 2021). In contrast, books, the internet, or events are rarely used as information channels.

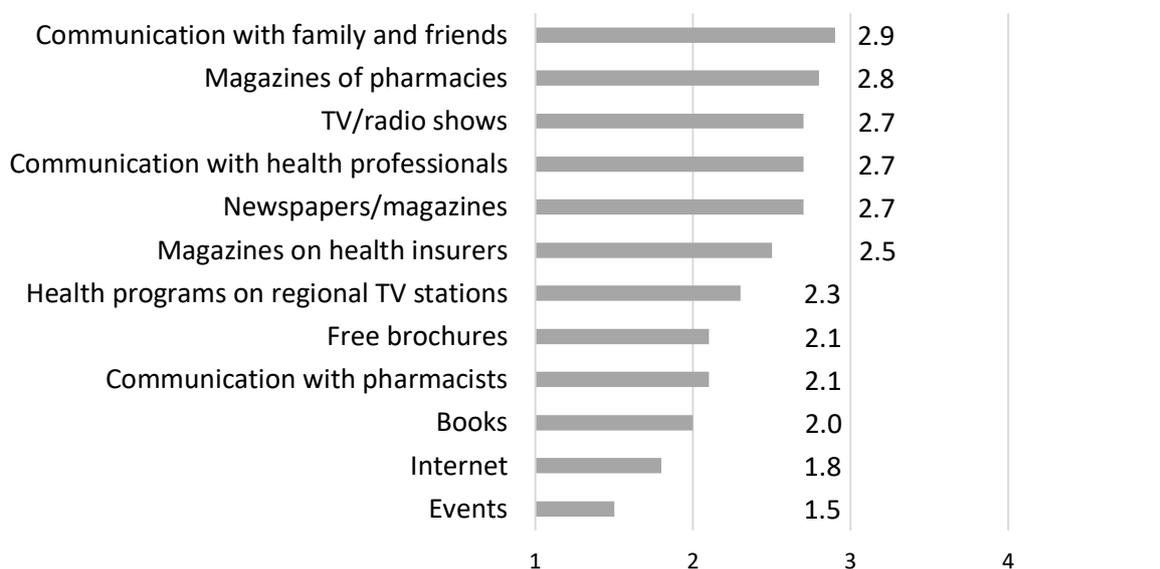


Figure 2. Use of Health Information Sources by Older Adults
Note. $n = 982-987$, weighted means on a scale from 1 (*never*) to 5 (*very often*).

Influence of Subjective Norms (RQ2)

The standardized measurement of the research model's constructs showed high reliability and validity, and TPB constructs explained 31% of the variance of intention strength and between 32 and 43% of the variance for the self-determined (intrinsic and identified) and between 8 and 16% of the variance for non-self-determined (introjected and external) regulations (Stehr, Rossmann, et al., 2021). Results of the structural equation modelling showed that subjective norms had little to no influence on intention strength ($b^* = -0.06, p = .054$) and self-determined regulations (intrinsic regulation: $b^* = 0.01, p = .807$; identified regulation: $b^* = 0.08, p = .009$) but were related to non-self-determined regulations (introjected regulation $b^* = 0.28, p < .001$; external regulation $b^* = 0.36, p < .001$).¹

Social Aspects of Beliefs (RQ3)

Multiple regression analysis showed that family ($b^* = 0.30, p = .017$) and spouses ($b^* = 0.24, p = .031$) play an important role as reference groups for subjective norms (see supplement material). Thus, the above-mentioned influence of subjective norms on non-self-determined regulations of physical activity can be attributed to these groups. In addition, a range of behavioural and control beliefs regarding physical activity were identified in the semi-structured interviews (Stehr, Lütke Lanfer, & Rossmann, 2021), which also comprise social aspects that may influence the intention to be physically active through attitudes and perceived behavioural control. Among the control beliefs that influence perceived behavioural control, we found that having sports companions increased older adults' perceived ability to engage in physical activity ($b^* = 0.13, p < .001$; see supplement material). Concerning beliefs about the consequences of the behaviour, relatedness was among the factors positively contributing to attitudes towards physical activity ($b^* = 0.09, p = .004$; see supplement material).

Discussion

In conclusion, it is important to consider social aspects at different levels of the campaign planning process for health promotion. Firstly, in line with previous studies (Alexandris et al., 2007; Gretebeck et al., 2007), our data confirmed that older adults' intention to be physically active is related to positive attitudes and high perceived behavioural control. This was the case for intention strength as well as its self-determination. In this context, the results of our two-study project showed that social aspects may be reflected in perceived positive consequences of physical activity as well as facilitators of the target behaviour, which can, in turn, increase positive attitudes and perceived behavioural control. Hence, social aspects indeed play a role as factors potentially contributing to older adults' intentions to be physically active. Feeling related to others as a positive consequence of physical activity may be an added value that contributes to a positive attitude. In addition, being able to exercise together with other people accounts for a high perceived behavioural control. However, it may be difficult for older adults to find people with the same ability level. Consequently, these social aspects of physical activity should be addressed to foster the target behaviour. Therefore, an adequate message to promote physical activity among older adults could be that physical activity may increase social encounters, which in turn makes it easier to maintain being active.

Secondly, social contacts may have an important relay function to pass on information and campaign messages, in particular for topics and focus populations, which rely more on interpersonal sources. In this context, spouses may have an especially high impact (Jeong & Bae, 2018) and, together with other family members, heavily influence the perception of subjective norms, as our data showed. At the same time, however, social contacts could exert a negative influence by emphasising subjective norms and, in turn, stimulating non-self-determined regulations. This illustrates that attempts of social influence can backfire if they are perceived as overly intrusive (Gellert et al., 2011; Thoits, 2011; Rooks, 2015).

We examined this complex interplay for the target groups of older adults. To reflect their individual life circumstances, we combined a qualitative and a quantitative approach. Firstly, older adults' health information sources and beliefs regarding physical activity were detected in the qualitative data. Secondly, the relative importance of those sources and relations between behavioural determinants and intention were examined quantitatively.

Nonetheless, the results must be interpreted against the background of the limitations of both studies. We did not collect observational data on actual behaviour but examined self-assessed physical activity and behavioural intentions of older adults. Participants of our studies reported relatively high activity levels. This could be due to social desirability and/or a self-selection bias of respondents with a healthier lifestyle and limits the transferability of results. Moreover, our analyses are based on cross-sectional data. The influence of the strength and self-concordance of intention on future behaviour needs to be confirmed in further longitudinal designs. However, a longitudinal study by Fuchs et al. (2017) already showed the importance of self-determination for the maintenance of a high exercise level. Therefore, we conclude that (interpersonal) communication aiming at the promotion of physical activity among older adults should support their perceived autonomy by explaining potential health and social consequences of the behaviour, providing choices, and acknowledging individual barriers and facilitators such as (lack of) sports companions.

Conclusion

The findings of our two-study project underline the ambivalent role of social aspects in promoting physical activity among older adults. On the one hand, older adults may be in need of support and are longing for feeling related to others. On the other hand, they may have trouble finding matching sports companions and value maintaining their autonomy. These contrasting influences should be accounted for when communicating health-promoting messages.

Notes

1. Regarding the other two TPB constructs, the results showed that intention strength was influenced by a positive attitude ($b^* = 0.14, p < .001$) and a high perceived behavioural control ($b^* = 0.50, p < .001$). In line with that, self-determined regulations were also positively related to attitude (intrinsic regulation: $b^* = 0.54, p < .001$; identified regulation: $b^* = 0.39, p < .001$) and perceived behavioural control (intrinsic regulation: $b^* = 0.23, p < .001$; identified regulation: $b^* = 0.28, p < .001$). For detailed results also see Stehr, Rossmann, et al. (2021).

Acknowledgements

The studies presented here were approved by the Advisory Board on Ethical Issues of the University of Erfurt.

Funding

This work was supported as part of ‘Ageing in Balance’, a project initiated and executed by the ‘Federal Centre for Health Education (BZgA)’ and financially supported by the ‘Association of German private healthcare insurers (PKV)’.

Conflict of Interest

The authors declare that there is no conflict of interest.

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