Health behaviours in emerging adulthood: Their relationship with perceived maternal and paternal parental attitudes and the mediating role of self-efficacy

BACKGROUND
The present research examined the mediating role of self-efficacy in the association between perceived maternal and paternal parental attitudes and health behaviours of males and females in emerging adulthood. Parental attitudes shape children’s self-esteem, positive self-image, and self-competence. This may affect their physical health and health behaviours throughout their lives.

PARTICIPANTS AND PROCEDURE
A total of 147 (mean age: 19.70, SD = 0.85, 68.7% females) participants took part in the study. They completed several questionnaires measuring health behaviours, perceived parental attitudes, and self-efficacy: the Inventory of Health Behaviours, the Retrospective Assessment of Parental Attitude, and the General Self-Efficacy Scale.

RESULTS
We found that that female participants exhibited healthier eating habits but lower self-efficacy than male participants did. Accepting and autonomy granting maternal and paternal parental attitudes predicted a positive health attitude (of both male and female participants), preventive behaviours (of male participants), and healthy eating habits (of male participants). As predicted, emerging adults’ self-efficacy mediated the relationship between their health behaviours and perceived parental attitudes. However, the mediation patterns were different for female and male participants.

CONCLUSIONS
The quality of perceived parental attitudes and self-efficacy are important for health-related lifestyle choices among emerging adults. Mothers and fathers may play different roles in the formation of health behaviours.

KEY WORDS
parental attitudes; health behaviours; self-efficacy; emerging adulthood
BACKGROUND

Research on emerging adulthood, though still scarce, suggests that this period in life involves many health risk factors due to a modern, Western culture lifestyle (Janssen, Katzmarzyk, Boyce, King, & Pickett, 2004) and age-typical tendencies to engage in risk behaviours (Furstenberg, 2006; Kessler, Mickelson, Waltes, Zhao, & Hamilton, 2004; National Survey on Drug Use and Health, 2011). Preliminary studies indicate family and cognition as predictors of health outcomes in emerging adults (Donnelly, Renk, & McKinney, 2013).

In the last decades, new trends in the behaviour of young people aged 18-25 years have emerged in highly developed societies. The time in which young adults undertake tasks typical of adulthood, such as marriage, parenthood, or permanent employment, has been delayed (Crocetti, Scrignaro, Sica, & Magrin, 2012). This specific time of transition between adolescence and full adulthood is called emerging adulthood (Arnett, 2000), an age of possibilities, self-focus, and active testing of alternatives, especially concerning professional and romantic life (Arnett, 2004). Focused on their own development, emerging adults better understand who they are and what they want in life, and formulate their own plans for adulthood, which they constantly revise. This intense exploration and the accompanying instability are also connected with the process of identity exploration, which started in adolescence. Therefore, emerging adults experience a feeling of in-between adolescence and adulthood. Their lack of a sense of full adulthood results from not performing fully its three main challenges: independent decisions, accepting responsibility for them, and financial independence. The responsibility for these challenges is often co-shared by parents, though paradoxically, emerging adults usually already function beyond their direct control (Piotrowski, Brzezińska, & Pietrzak, 2013). Freed from duties typical for adults, yet before making final commitments, they intensively test various possibilities, which can be a quite stressful and demanding process (Arnett, 2013). Diminished parental control and busy lifestyle typical of this period could, therefore, have implications for the health behaviours of emerging adults.

Health behaviours are personal, conscious actions that directly or indirectly affect the state of one’s health. They are purposeful, related to one’s lifestyle and daily habits (e.g., amount of sleep, eating habits, physical activity, amount of consumed alcohol, and using psychoactive substances). These behaviours may be either positive or negative (Woynarowska, 2010). Decisions regarding health behaviours are based on both objective knowledge about the factors that determine health or disease and on subjective beliefs about them (Sęk, 2000). For instance, attitudes towards health behaviours may depend on gender and different gender socialisation processes among boys and girls, e.g., eating healthy food and dieting are considered by some men as feminine, not masculine behaviours, and are therefore rejected (El Ansari, Suominen, & Samara, 2015; Wardle et al., 2004).

Undoubtedly, parents are important agents in the process of acquiring and shaping health behaviours. They apply different health practices while caring for a child (e.g., regarding quality and frequency of meals, sleep duration and sleep habits, amount of time spent watching TV), and when a child’s cognitive and motor development progress, they provide instruction and training on health practices (Ray, Kalland, Lehto, & Roos, 2013). Subsequently, adolescence is a critical moment to consolidate the habits and attitudes towards health activities (Woynarowska, 2010; Wojtczak, 2009). In the period of emerging adulthood, when young people achieve considerable autonomy (Arnett, 2004; Shanahan, 2000), they gradually assume full responsibility for their life, including their own health and the health of others, e.g., of aging parents (Weiner, Roloff, & Pusateri, 2014). They start to use diverse health practices on their own, including possibly those demonstrated and/or promoted by their parents. Therefore, the behaviour and attitudes of parents can be of great importance for the quality of health of emerging adults (Kanter-Agliata & Renk, 2009; Niemeier, Duan, Shang, & Yang, 2017).

The impact of positive parental health practices on favourable health behaviours of the child is strengthened by parental attitudes of warmth and responsiveness (Ray et al., 2013). Parental attitudes determine the way in which parents build relationships with their children, and how they react in certain parenting situations (Lipowska, Lipowski, & Pawlicka, 2016). Studies indicate that parental attitudes influence the psychological development of children and adolescents and their ability to adapt and function properly. Parents are the first and most important source of emotional support, but also of self-knowledge and self-acceptance. Positive parental attitudes shape children’s self-esteem, positive self-image, and self-competence (Lord, Eccles, & McCarthy, 1994; Wissink, Dekovic, & Meijer, 2006), which affect their mental and physical health (Donnelly et al., 2013; Trzensiński et al., 2006). For instance, children of warm, accepting, and sensitive parents eat more fruit and vegetables (Kremers, Bridge, de Vries, & Engels, 2003; Lytle et al., 2003) and are less likely to use alcohol during adolescence (Kuendig & Kuntsche, 2006; van der Vorst, Engels, Meeus, & Dekovic, 2006). However, children of parents not involved in parenting, emotionally cold, and/or too controlling, regardless of their age, struggle with multiple health issues. For example, a controlling attitude adversely affects the adaptation of children with diabetes to their disease and lowers their treatment effectiveness (Butler, Skin-
The sense of self-efficacy refers to one’s beliefs about one’s effectiveness in dealing with task completion. In other words, it is a personal belief in one’s ability to plan, organise, control, and implement a purposeful action (Bandura, 1997). The conviction of how well you can cope with the task determines the amount of effort that you invest in starting and continuing an action and persistence in overcoming potential difficulties on the way to your goal (Luszczynska & Schwarzer, 2005; Schwarzer, 2008). Beliefs about one’s self-efficacy are formed in childhood and adolescence under the influence of one’s own experiences (mastery experiences), observing the actions of important persons (vicarious experiences/modelling) or feedback given about us (verbal persuasion) (Bandura, 1993, 1997). Therefore, parents play a key role in the emergence of self-efficacy. The parental attitude that guarantees acceptance, encouragement to become independent, and open communication (Bong, 2008; Pomerantz & Eaton, 2001) is of great importance for positive development of self-efficacy. Adolescents who perceive their parents as warm, dedicated, and allowing for an age-appropriate level of autonomy and independence manifest higher levels of self-efficacy than their peers who evaluate their parents less favourably (Ingoldsby, Schvaneveldt, Supple, & Bush, 2004). Nidith and Varela (2012) reported that a rejecting maternal (but not paternal) attitude predicted low self-efficacy, which mediated the relationship between maternal rejecting attitude and an increased level of anxiety in teenagers. Many other studies also point to the negative impact of a maternal overprotective attitude on children’s self-efficacy (Bradley-Geist et al., 2014), excessive dependence on others, and higher levels of neuroticism (Odenweller, Booth-Butterfield, & Weber, 2014). As self-efficacy is essential to achieve the objectives (Frydenberg & Lewis, 2009), it also affects the persistence and effective coping with situations involving health. Self-efficacy, therefore, affects the quality of self-care and healthy lifestyle behaviours (Binay & Yiğit, 2016; Zhou, Sun, Knoll, Hamilton, & Schwarzer, 2015), including, for example, regular exercise (Dishman et al., 2004; Dwyer et al., 2012; Wienert, Kuhlmann, & Lippke, 2015), preventive behaviours (Schwarzer & Renner, 2000), or perseverance in coping with the effects of chronic diseases (Berg et al., 2011; Helgeson, Honcharuk, Becker, Escobar, & Siminerio, 2011).
Health behaviours in emerging adulthood and the mediating role of self-efficacy

Mean age for males = 19.8 years, SD = 0.82, mean age for females = 19.8 years, SD = 0.91, (t(145) = 1.00, p = .318) participated. A general health survey that we developed for the study indicated that 36 (78.3%) males and 86 (85.1%) females regarded themselves as being a generally healthy person. However, 17 (37.0%) males and 33 (32.7%) females declared suffering from a chronic illness, 10 (21.7%) males and six (5.9%) females reported having a disability, and 15 (32.6%) males and 36 (35.6%) females took over-the-counter and/or prescription drugs regularly. Moreover, 33 (71.1%) males and 61 (60.4%) females reported that a close relative/best friend suffered from a serious illness, and 23 (50.0%) males and 52 (51.5%) females lost a close relative/best friend to illness, or their close relatives/best friends became disabled as a result of health negligence. After providing verbal consent, each respondent completed a set of self-reporting questionnaires designed to evaluate health behaviours, perceived parental attitudes, and self-efficacy.

The Inventory of Health Behaviours (Juczynski, 2009) consists of 24 statements describing health-related behaviours: correct eating habits (e.g. eating fruit, vegetables, and whole grain products), preventive behaviours (following health recommendations and seeking information about maintaining good health), a positive mental attitude (maintaining psychological well-being by avoiding stress, difficult emotions, or woeful situations), and health practices (daily basis activities that impact overall health outcomes like sleeping habits, leisure, and physical activity). The overall intensity and the intensity of each category of health-related behaviours is evaluated on the basis of their self-reported frequency, rated on a five-point scale, where 1 means almost never, and 5 means almost always. The higher the value for the general index and for the four factors, the higher the level of the declared health behaviour (min = 24, max = 120 points). Test reliability is: .85 for the total score and from .6 to .65 for the four subscales.

Retrospective Assessment of Parental Attitudes (Plopa, 2008) consists of two separate, 50-statement questionnaires to assess parental attitudes of a father and a mother. The respondent rates the statements using a five-point scale ranging from “she (he) was definitely like that and behaved this way” to “she (he) was definitely not like that and did not behave this way”. The tool allows for a retrospective evaluation of five parental attitudes: accepting, demanding, autonomy granting, inconsequent, and overprotective. A higher score indicates higher intensity of a specific parental attitude. High score in (a), the accepting attitude, represents a close emotional relationship between a parent and a child, the parent likes the child as he or she is, supports and cares for him/her, allows for open, two-way communication with the child. High score in (b), the demanding attitude, represents a parent who is cold, aloof, and controlling. The parent expects a lot from the child, while ignoring his or her capabilities, preferences, and developmental needs. The parent does not allow for two-way communication with the child and requires total obedience. High score in (c), the autonomy granting attitude, represents a parent who respects and supports the child’s emerging need for independence and separation from a parent who behaves flexibly and takes into account the developmental needs of the child. High score in (d), the inconsequent attitude, represents a parent whose behaviours are changeable, often unpredictable and extreme, which often leads to the child’s withdrawal from the relationship with the parent. High score in (e), the overprotecting attitude, represents a parent who sees their child as helpless, feels a constant urge to care excessively for the child, and engage in all his or her spheres of life, ignoring the child’s need for autonomy and independence. Test reliability is from .93 to .86 for the maternal scale, and from .90 to .84 for the paternal scale.

The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) consists of 10 statements constituting a single factor – self-efficacy. The higher the score, the greater the belief in one’s effectiveness to cope with difficult situations and obstacles. The internal reliability for the scale (Cronbach’s α) is between .76 and .90.

RESULTS

DIFFERENCES IN HEALTH BEHAVIOURS, PERCEIVED PARENTAL ATTITUDES, AND SELF-EFFICACY BETWEEN MALE AND FEMALE EMERGING ADULTS

The Mann-Whitney U test for independent samples (Table 1) showed that females (Mdn = 20) exhibited more healthy eating habits as compared to males (Mdn = 18; U = 1589.5, Z = 3.07, p = .002, r = .25), but lower self-efficacy (Mdn = 30 for females, Mdn = 32 for males; U = 1375.5, Z = 2.45, p = .014, r = .20). Male and female participants did not differ in other aspects of health behaviours (preventive behaviours, positive mental attitude, and health practices) or how they retrospectively assessed their mothers’ and fathers’ parental attitudes.

CORRELATIONS BETWEEN VARIABLES

In order to examine the relationship between health behaviours, the retrospective assessment of parental attitudes (mother’s and father’s accepting, demanding, autonomy granting, inconsequent, and overprotective attitudes), and self-efficacy in male and
Table 1
*Descriptive characteristic of the compared groups: health behaviours, retrospective assessment of parental attitudes, and self-efficacy*

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory of Health Behaviours</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy eating habits</td>
<td>$Mdn = 18$</td>
<td>$Mdn = 20$</td>
<td>$U = 1589.5$, $Z = 3.07$, $p = .002$, $r = .25$</td>
</tr>
<tr>
<td>Preventive behaviours</td>
<td>$Mdn = 17$</td>
<td>$Mdn = 18$</td>
<td>$U = 1954$, $Z = 1.55$, $p = .122$, $r = .13$</td>
</tr>
<tr>
<td>Positive mental attitude</td>
<td>$Mdn = 20$</td>
<td>$Mdn = 19$</td>
<td>$U = 2240.5$, $Z = 0.35$, $p = .730$, $r = .03$</td>
</tr>
<tr>
<td>Health practices</td>
<td>$Mdn = 20$</td>
<td>$Mdn = 19$</td>
<td>$U = 2102$, $Z = 0.93$, $p = .354$, $r = .08$</td>
</tr>
<tr>
<td>Total score</td>
<td>$Mdn = 74.5$</td>
<td>$Mdn = 77$</td>
<td>$U = 2102$, $Z = 0.93$, $p = .354$, $r = .08$</td>
</tr>
<tr>
<td><strong>Retrospective Assessment of Parental Attitudes</strong></td>
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<tr>
<td>Mother’s attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepting</td>
<td>$Mdn = 39.5$</td>
<td>$Mdn = 40$</td>
<td>$U = 2212$, $Z = 0.464$, $p = .642$, $r = .04$</td>
</tr>
<tr>
<td>Demanding</td>
<td>$Mdn = 28$</td>
<td>$Mdn = 25$</td>
<td>$U = 2007$, $Z = 1.321$, $p = .186$, $r = .11$</td>
</tr>
<tr>
<td>Autonomy granting</td>
<td>$Mdn = 40$</td>
<td>$Mdn = 39$</td>
<td>$U = 2167.5$, $Z = 0.650$, $p = .515$, $r = .05$</td>
</tr>
<tr>
<td>Inconsequent</td>
<td>$Mdn = 26$</td>
<td>$Mdn = 23$</td>
<td>$U = 2096$, $Z = 0.949$, $p = .343$, $r = .08$</td>
</tr>
<tr>
<td>Overprotective</td>
<td>$Mdn = 36.5$</td>
<td>$Mdn = 36$</td>
<td>$U = 2172.5$, $Z = 0.630$, $p = .592$, $r = .05$</td>
</tr>
<tr>
<td>Father’s attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepting</td>
<td>$Mdn = 34$</td>
<td>$Mdn = 36$</td>
<td>$U = 1968$, $Z = 0.190$, $p = .850$, $r = .02$</td>
</tr>
<tr>
<td>Demanding</td>
<td>$Mdn = 29$</td>
<td>$Mdn = 27$</td>
<td>$U = 1810$, $Z = 0.920$, $p = .358$, $r = .08$</td>
</tr>
<tr>
<td>Autonomy granting</td>
<td>$Mdn = 37$</td>
<td>$Mdn = 37$</td>
<td>$U = 1988.5$, $Z = 0.095$, $p = .924$, $r = .01$</td>
</tr>
<tr>
<td>Inconsequent</td>
<td>$Mdn = 29$</td>
<td>$Mdn = 26$</td>
<td>$U = 1804$, $Z = 0.947$, $p = .343$, $r = .08$</td>
</tr>
<tr>
<td>Overprotective</td>
<td>$Mdn = 25.5$</td>
<td>$Mdn = 25$</td>
<td>$U = 1991$, $Z = 0.081$, $p = .936$, $r = .01$</td>
</tr>
<tr>
<td><strong>General Self-Efficacy Scale</strong></td>
<td></td>
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<tr>
<td>Self-efficacy</td>
<td>$Mdn = 32$</td>
<td>$Mdn = 30$</td>
<td>$U = 1737.5$, $Z = 2.45$, $p = .014$, $r = .20$</td>
</tr>
</tbody>
</table>

Anna Maria Jankowska, Marta Łockiewicz, Dorota Dykalska-Bieńk, Ariadna Łada, Weronika Owoc, Dawid Stańczykowski
female emerging adults, we calculated Spearman’s rho correlations (Table 2).

HEALTH BEHAVIOURS AND THE RETROSPECTIVE ASSESSMENT OF MATERNAL PARENTAL ATTITUDES

We found that in female participants, positive mental attitude was weakly correlated with accepting, autonomy granting (positively), and inconsequent attitudes (negatively). In male participants, maternal inconsequence was moderately negatively correlated with health practices.

HEALTH BEHAVIOURS AND THE RETROSPECTIVE ASSESSMENT OF PATERNAL PARENTAL ATTITUDES

We found that in female participants, positive mental attitude was moderately correlated with accepting, and weakly with autonomy granting (positively), and inconsequent (negatively) attitude. In male participants, preventive behaviours were moderately correlated with accepting, autonomy granting (positively), and demanding and inconsequent (negatively) attitude. Positive mental attitude was strongly correlated with accepting (positively) and moderately with autonomy granting (positively) attitude, and healthy eating habits moderately with accepting attitude.

HEALTH BEHAVIOURS AND SELF-EFFICACY

We found that in female students, self-efficacy was correlated positively with healthy eating habits, preventive behaviours (weakly), and positive mental attitude (moderately). In male students, self-efficacy was correlated positively with healthy eating habits and positive mental attitude (moderately).

SELF-EFFICACY AND THE RETROSPECTIVE ASSESSMENT OF PARENTAL ATTITUDES

We found that in female students, self-efficacy was moderately correlated with the mother’s accepting (positively) attitude, and weakly with the mother’s autonomy granting (positively) and inconsequence (negatively). In male students, self-efficacy was moderately correlated with the mother’s autonomy granting (positively) attitude. No correlation was found between self-efficacy and the retrospective assessment of paternal attitudes.

REGRESSION

In female participants positive mental attitude was influenced by maternal accepting \[ B = .08 (0.4), p = .040, R^2 = .04, F(1, 96) = 4.33 \] and autonomy granting \[ B = .10 (.05), p = .037, R^2 = .04, F(1, 99) = 4.49 \], but not inconsequent attitude \[ B = .07 (0.4), p = .073, R^2 = 0.03, F(1, 99) = 3.27 \], and by paternal accepting

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Table 2

<table>
<thead>
<tr>
<th>Healthy eating habits</th>
<th>Preventive behaviours</th>
<th>Positive mental attitude</th>
<th>Health practices</th>
<th>Self-efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td><strong>Females</strong></td>
<td><strong>Males</strong></td>
<td><strong>Females</strong></td>
<td><strong>Males</strong></td>
</tr>
<tr>
<td>Mother’s attitude</td>
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<tr>
<td>Accepting</td>
<td>.22</td>
<td>.32*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy granting</td>
<td>.22</td>
<td>.30</td>
<td>.28*</td>
<td></td>
</tr>
<tr>
<td>Inconsequent</td>
<td>-.20</td>
<td>-.36</td>
<td>-.24</td>
<td></td>
</tr>
<tr>
<td>Father’s attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepting</td>
<td>.37</td>
<td>.37</td>
<td>.53*</td>
<td>.32*</td>
</tr>
<tr>
<td>Demanding</td>
<td>-.37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy granting</td>
<td>.48*</td>
<td>.44*</td>
<td>.28*</td>
<td></td>
</tr>
<tr>
<td>Inconsequent</td>
<td>-.32</td>
<td>-.29*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.46*</td>
<td>.26*</td>
<td>.27*</td>
<td>.48*</td>
</tr>
</tbody>
</table>

Note. All marked correlations are significant at \( p \leq .01 \) level. All unmarked correlations are significant at \( p \leq .05 \) level. Only significant correlations are included.
In male participants, health practices were predicted by maternal inconsequent attitude \[ B = -0.13 (0.06), p = 0.032, R^2 = 0.10, R(1, 39) = 7.40 \], and autonomy granting attitude \[ B = 0.11 (0.04), p = 0.008, R^2 = 0.07, R(1, 39) = 4.91 \]. Preventive behaviours were influenced positively by paternal accepting attitude \[ B = 0.16 (0.07), p = 0.027, R^2 = 0.12, R(1, 39) = 5.30 \] and paternal autonomy granting attitude \[ B = 0.18 (0.07), p = 0.019, R^2 = 0.13, R(1, 39) = 6.00 \], and negatively by paternal demanding attitude \[ B = -0.14 (0.07), p = 0.048, R^2 = 0.10, R(1, 39) = 4.19 \], but not inconsequent attitude \[ B = -0.11 (0.07), p = 0.089, R^2 = 0.07, R(1, 39) = 3.04 \]. Positive mental attitude was predicted by paternal accepting \[ B = 0.29 (0.08), p = 0.001, R^2 = 0.23, R(1, 39) = 11.88 \] and autonomy granting \[ B = 0.18 (0.09), p = 0.055, R^2 = 0.09, R(1, 39) = 3.93 \]. Healthy eating habits were influenced by paternal accepting attitude \[ B = 0.19 (0.09), p = 0.036, R^2 = 0.11, R(1, 39) = 4.71 \].

MEDIATION

To test the hypothesis that the relationship between the retrospective assessment of parental attitudes (mother’s and father’s accepting, demanding, autonomy granting, inconsequent, and overprotective attitude) and health behaviours is mediated by self-efficacy, we calculated a PROCESS (model 4; by Hayes, 2013) mediation analysis with bootstrap resamples.

In female participants, maternal accepting attitude was indirectly linked to a positive mental attitude. The participants who felt that their mother’s attitude was more accepting reported higher self-efficacy \( (a = .11) \), which was linked to a higher positive mental attitude \( (b = .24) \). Adjusted confidence intervals for an indirect effect \( (ab = .03) \) based on 5000 bootstrap resamples were above zero \( (from .000 to .080) \). However, there was no direct effect of the impact of maternal accepting attitude on a positive mental attitude of the female emerging adults \( (c’ = .05, p = .170) \).

In female participants, maternal autonomy granting attitude was indirectly linked to a positive mental attitude. The participants who felt that their mothers supported and accepted their autonomy reported higher self-efficacy \( (a = .11) \), which was linked to a higher positive mental attitude \( (b = .25) \). Adjusted confidence intervals for an indirect effect \( (ab = .03) \) based on 5000 bootstrap resamples were above zero \( (from .000 to .020) \). However, there was no direct effect of the impact of maternal acceptance/rejection on a positive mental attitude of the female emerging adults \( (c’ = .07, p = .110) \).

In male participants, paternal accepting attitude was indirectly linked to a positive mental attitude. The participants who felt that their fathers’ acceptance was indirectly linked to a positive mental attitude.

To test the hypothesis, we calculated a PROCESS (model 4; by Hayes, 2013) mediation analysis with bootstrap resamples. The participants who felt that their father’s acceptance was indirectly linked to a positive mental attitude.

Note. Standard errors in parentheses; number of bootstrap resamples: 5000. Bootstrap CI method: biased corrected; 95%.

Figure 1. Retrospective assessment of maternal accepting attitude, self-efficacy, and positive mental attitude in female students.

Figure 2. Retrospective assessment of maternal autonomy granting attitude, self-efficacy, and positive mental attitude in female students.
reported higher self-efficacy \((a = .18)\), which was linked to a higher positive mental attitude \((b = .46)\). Adjusted confidence intervals for an indirect effect \((ab = .08)\) based on 5000 bootstrap resamples were above zero \((\text{from } .010 \text{ to } .023)\). Moreover, there was also a direct effect of the impact of paternal accepting attitude on a positive mental attitude, showing that male students who perceived their fathers as accepting reported more positive mental attitudes \((c' = .20, p = .010)\).

In male participants, paternal accepting attitude was indirectly linked to healthy eating behaviours. The participants who felt their fathers’ acceptance reported a higher self-efficacy \((a = .18)\), which was linked to a higher positive mental attitude \((b = .32)\). Adjusted confidence intervals for an indirect effect \((ab = .06)\) based on 5000 bootstrap resamples were above zero \((\text{from } .000 \text{ to } .019)\). However, there was no direct effect of the impact of paternal accepting attitude on healthy eating habits \((c' = .13, p = .140)\).

### DISCUSSION

This study aimed to investigate gender differences in health behaviours in emerging adults, the association between their health behaviours and perceived parental attitudes, as well as the mediating role of self-efficacy.

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**HEALTH BEHAVIOURS AND SELF-EFFICACY IN MALE AND FEMALE EMERGING ADULTS**

We noticed significant differences between the male and female participants in the declared health behaviours and self-efficacy. The male participants, compared with the female ones, cared less about a healthy, balanced diet but exhibited a higher sense of self-efficacy. In fact, the men believed that healthy eating habits should be more important for women (El Ansari et al., 2015; Wardle et al., 2004), who are usually more concerned about an attractive physical appearance (Wardle et al., 2004). Furthermore, higher self-efficacy levels in male participants are consistent with the literature, too (Klassen & Chiu, 2010). Our results can be explained by a different pattern of gender socialisation, as boys’ social worth depends on their fitness and activity, and not on their appearance. Males more often treat their bodies as a process, not as an object (Franzoi et al., 2012), and this results in a lesser importance of one’s appearance and in a satisfaction with one’s body provided that it is adequately fit. Females, on the other hand, receive information that they are evaluated through the prism of their appearance and physical attractiveness quite early in the process of gender socialisation. Both boys and girls, as gender socialisation advances, begin to see themselves through the prism of social expectations associated
with their gender. Fulfilling social expectations in accordance with gender stereotypes may be especially important during emerging adulthood, when young men and women more intensively engage in searching for a partner to start a family with. Thus, they care about fulfilling gender norms.

PARENTAL ATTITUDES, HEALTH BEHAVIOURS, AND THE MEDIATING ROLE OF SELF-EFFICACY

In our study, we noticed predominantly the influence of perceived accepting and autonomy granting parental attitudes on the emerging adults’ health behaviours. This is consistent with the literature. According to the parental acceptance-rejection theory, parental and other attachment figures’ acceptance is critical for the correct psychological development and adjustment of children, adolescents, and later adults (Khaleque & Rohner, 2002). Parents who are warm and accept their children for who they are, who flexibly respond to their children’s needs and encourage them to take up responsibilities (an autonomy granting attitude), raise children who are independent, self-assured, and have positive beliefs about their competences and self-efficacy (Bradley-Geist et al., 2014; Collins & Laursen, 2006; Ingoldsby et al., 2004). This, consequently, has a positive effect on a wide range of behaviours, including health behaviours and preventive health behaviours (Riggs, Sakuma, & Pentz, 2007) of both males and females (Mohamadian & Ghannaee-Arani, 2014). Parental attitudes, independently of a child’s gender, age, or culture, were found to be especially important for such health behaviours as maintaining a healthy body mass index (Berge, Wall, Loth, & Neumark-Sztainer, 2010) and mood regulation (Rohner, Khaleque, & Cournoyer, 2005). Children of affectionate and autonomy granting parents are more optimistic (Jackson, Pratt, Hunsberger, & Pancer, 2005; Larzelere, Morris, & Harrist, 2013), have better dietary habits (Goldschmidt et al., 2016), and have better health recommendation adherence (Shorer et al., 2011).

The results from previous research are also confirmed in our study, where parental attitudes and self-efficacy mainly predicted such health behaviours as positive mental attitude (of male and female participants), preventive behaviours, and healthy eating habits (of male participants). Furthermore, we noticed that self-efficacy not only determined health behaviours but, more importantly, it also mediated between health behaviours and perceived parental attitudes. Thus, we assume that the quality of parental attitudes influences their child’s self-efficacy, which, in turn, determines the quality of health behaviours (positive vs. negative health behaviours). Emerging adults, whose parents support their autonomy and develop their confidence, tend to exhibit higher self-efficacy (Ingoldsby et al., 2004). Consequently, self-efficacy provides them with the sense of competence, control over one’s life, and the ability to overcome challenges, which creates belief that effort invested in certain behaviours (e.g. dieting) will produce positive effects (e.g. lower BMI). Therefore, emerging adults with high self-efficacy are more likely to engage in positive rather than negative health behaviours (Binary et al., 2016; DuBois, Felner, Sherman, & Bull, 1994; Hochhausen et al., 2007; Klein-Hessling, Lohaus, & Ball, 2005; Posadowski, Stockl, Musonda, & Tsouroufli, 2010).

In previous studies self-efficacy was a salient factor for effective weight control, refraining from excessive food intake (Francis & Susman, 2009; Gokee-LaRose, Gorin, & Wing, 2009), managing preventive behaviours (Anderson, Winett, & Wojcik, 2007; Cooper, Wells, & Todd, 2004; Luszczynska & Schwarz, 2003), and mood regulation (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Donnelly et al., 2013), which are also health behaviours that were predicted by self-efficacy in our study. Furthermore, Reed, Duncan, Lucier-Greer, Fixelle, and Ferraro (2016) found that self-efficacy is an important mediator between autonomy granting parenting and mood disorder and physical health among emergent adults. Interestingly, in our study self-efficacy mainly mediated the relationship between health behaviours and parental attitudes of a same-sex parent, which we discuss in the next paragraph.

GENDER AND ASSOCIATION BETWEEN PERCEIVED PARENTAL ATTITUDES AND HEALTH BEHAVIOURS

In our study, health behaviours of female emerging adults were determined by both maternal and paternal attitudes, while of male ones – primarily by paternal. These results suggest a father’s particularly important role in shaping health behaviours, attitudes towards one’s own body, and health in young men. Perhaps this effect is related to identity, which is developing intensively during emerging adulthood (Kroger, Martinussen, & Marcia, 2010). In this period, young men explore their identity, especially their gender identity, and refer to their father’s attitudes and beliefs. This assumption is confirmed by the finding that a father-son (but not a mother-son) relationship determines the identity exploration process for boys (Grotevant & Cooper, 1985). Furthermore, identity exploration (Stolz, Barber, & Olsen, 2005) and identity achievement in young adult men (e.g. Beyers & Goossens, 2008) depend on the influence of accepting and autonomy granting paternal attitudes, and gender norms that young men identify with are closely associated with their health-related behaviours (Cohen & Burger, 2000). Strong views...
about masculinity among young men predict a higher risk for sexually transmitted infections, substance abuse, or other risk behaviours, which, according to gender stereotypes, are considered typical and frequent for men (Courtenay 1998; Pulerwitz & Barker, 2008). Health-risk behaviours (e.g. unprotected sex, substance abuse) may be considered by some men as evidence of true manhood (Courtenay, 2000). Thus, young men who want to emphasise their masculinity may perceive certain health behaviours through the prism of gender stereotypes, and therefore consider a healthy diet as typically female behaviour. Consequently, despite their awareness of the importance of proper nutrition for their health, these men may choose less favourable nutrition options (Courtenay, 2000). In our studies, paternal accepting attitude positively influenced healthy eating habits of young men, and this relationship was further mediated by self-efficacy. Paternal accepting attitude and the sense of agency (as paternal accepting attitude influenced self-efficacy) could be conducive to building a positive self-image as a man. Thus, perhaps engaging in health behaviours typically attributed to women is seen as less threatening to their masculinity. The quality of the father-son relationship may be related to the boys’ masculine identification (Mussen & Distler, 1959) and reduce adolescent risk behaviours (Zimmerman, Salem, & Notaro, 2000).

In our study, the only health behaviour among female participants predicted by perceived parental attitudes was positive mental attitude. Positive mental attitude is a factor that, according to Juczyński (2009), is related to one’s ability to avoid stressful and emotionally challenging situations, and preserve positive mood and thinking. Maintaining psychological well-being and emotional hygiene translates itself into positive outcomes in physical health and greater ability to recover from illnesses (Thayer, Åhs, Fredrikson, Sollers, & Wager, 2012). Nonetheless, among female participants no other health behaviours were predicted by perceived parental attitudes, which is a result that varies from previous research that, for instance, demonstrated that healthy eating (e.g. fruit and vegetable intake) in adolescent girls is positively associated with close emotional relationship with the father (Berge et al., 2010), and negatively associated with the mother’s overprotective parental attitude (Toda, Kawai, Takeo, Rokutan, & Morimoto, 2008). In our study, both mother’s and father’s perceived parental attitudes were found to play a significant role in predicting positive mental attitude of female participants, namely, accepting and autonomy granting maternal and paternal parental attitudes. This result is in line with previous research indicating the importance of both parents’ emotional closeness and acceptance for psychological wellbeing of their offspring in childhood and adulthood (e.g. Rohner et al., 2005). Moreover, both the father-daughter and mother-daughter relationship determine an identity exploration process for adolescent girls, and a father-son relationship for teenage boys (Grotevant & Cooper, 1985). Thus, we assume that for girls and young women, both the father and mother play important roles as behaviour models, sources of feedback, and agents motivating active exploration, independence, and self-care in the process of their psychological development. Mothers are possibly female role models for their daughters, providing direct and indirect instructions on certain behaviours and attitudes (Grotevant & Cooper, 1985). Fathers provide feedback on whether presented behaviours are accepted, which contributes to their daughters’ self-perception (Perkins, 2001), achievement motivation (Cooper, 2009), and lower levels of distress (Byrd-Craven, Auer, Granger, & Massey, 2012).

LIMITATIONS

The results of our study should be considered in the context of certain limitations. The first is a small sample size (147 emerging adults, 101 female and 46 male participants), which is the reason why our results cannot be generalised into the whole population of emerging adults (1). Furthermore, the small sample reduces the statistical power to identify smaller effects, so there is a risk that some significant phenomena between variables will not be observed (Rehbein & Baier, 2013). Thus, future research requires a greater number of participants, especially male ones, whose number in this study was lower than that of women. Another important limitation is the participation of students of social sciences (2). In future studies a wider group of emerging adults should be examined, and not limited to a single faculty or university students in general. In order to reduce the homogeneity of the respondents, it would be necessary to include emerging adults who did not enter higher education, and have already entered a job market. Another limitation of this study is its cross-sectional character (3). As a result, the results of the study do not inform about the course of the development of health behaviours and how they are influenced at the subsequent stages of childhood by the mother, the father, and their parental attitude. We suggest performing a longitudinal study in which children would be followed for several years. Thus, the process of the formation of their health behaviours could be observed and potential influencing factors (e.g. coping skills and self-regulation) measured several times. Furthermore, it would be crucial to observe and gather data about the roles of the mother and the father in health behaviour in the context of gender identity development and the development of views regarding masculinity and
CONCLUSIONS

We found that, as expected, perceived parental attitudes predicted health behaviour for both male and female participants, and some of these associations were mediated by self-efficacy. The most pronounced relationships were found between accepting and autonomy granting maternal and paternal parental attitudes and positive health attitude (of both male and female participants), preventive behaviours, and healthy eating habits (of male participants).

In the case of female respondents in emerging adulthood, we observed that perceiving both of their parents as accepting and autonomy-granting, and fathers as consequent (less impulsive, unpredictable, and unstable) boosted their positive mental attitude. Interestingly, no other health behaviour was determined by the perceived mother’s or father’s parental attitudes in female participants. Self-efficacy mediated the relationship between perceived attitudes of accepting and autonomy granting of mothers and positive mental attitude of young female respondents during emerging adulthood.

In the case of male respondents in emerging adulthood, we observed that the participants who perceived their fathers as more accepting and autonomy-granting reported taking preventive measures. In the case of the mother’s parental attitudes, only inconsistent attitude determined lower results in health practices, i.e. the respondents were less likely to undertake daily physical activity and had worse sleeping habits. Self-efficacy mediated the relationship between perceived paternal accepting attitude and positive mental attitude and healthy eating habits.

Our results show the importance of perceived parental attitudes for young adults’ lifestyle choices. Parents who accept their children unconditionally and give them autonomy equip them with positive mental attitudes that will help them maintain a healthy lifestyle, and increase their quality of life.

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Health behaviours in emerging adulthood and the mediating role of self-efficacy
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