

Binge-Watching as a Way of Coping: The Association between Alexithymia, Binge-
Watching, and Interpersonal Problems

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Abstract

Introduction: Scoring high on alexithymia is associated with experiencing interpersonal problems and maladaptive coping responses. A common maladaptive coping behaviour is binge-watching, however, this has never been researched in relation to alexithymia. This study aimed at investigating whether alexithymia moderates the relationship between interpersonal problems as a stressor and binge-watching as a coping behaviour. Furthermore, the relationship between interpersonal problems, alexithymia, and binge-watching was researched. **Methods:** 109 respondents ($M_{\text{age}} = 22.21$, $SD = 5.37$), whereof 71 were female and 38 male, were recruited using a cross-sectional online survey design. The survey consisted of the TAS-20 to measure alexithymia, the IIP-C-IRT to test interpersonal problems, and the binge-watching subscale of the BWESQ and one additional question to assess binge-watching. **Results:** A moderate, positive relationship was found between interpersonal problems and binge-watching. There was no moderation effect of alexithymia on the correlation between interpersonal problems and binge-watching. A strong, positive correlation was found between alexithymia and interpersonal problems. Moreover, there was a positive but weak correlation between alexithymia and binge-watching. **Discussion:** The results indicate that persons experiencing interpersonal problems engage in more binge-watching. Alexithymia was not identified as a moderator on the relation between interpersonal problems and binge-watching, meaning that highly alexithymic individuals experiencing interpersonal problems do not binge-watch more than persons with no alexithymia. This result indicates that alexithymics employ coping behaviours other than binge-watching when confronted with interpersonal problems. Furthermore, people scoring high on alexithymia seem to have more interpersonal problems. Besides, there was a weak correlation between alexithymia and binge-watching.

Keywords: alexithymia, interpersonal problems, binge-watching

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Introduction

Emotions help people to govern and regulate their behaviours (Baumeister, Vohs, Nathan DeWall, & Zhang, 2007). However, there are people who have an emotion-processing deficiency called alexithymia (Taylor & Bagby, 2004), which is characterized by problems in identifying emotions as well as expressing and defining them to other people, a depleted fantasy, a cognitive style of focusing on external events (Nemiah, 1977; Sifneos, 1973), and problems in differentiating emotions from physical feelings (Sifneos, 2000). Research in cognitive psychology describes alexithymia as a shortcoming in cognitive processing and control of emotions (Taylor, 2000). People affected by alexithymia seem to be limited in their ability to recognise their emotional signals and to balance their emotions adequately (Ciarrochi, Heaven, & Supavadeeprasit, 2008).

Alexithymia can be found in individuals suffering from different psychological conditions as well as in the general population. Taking together the results of several studies, around 9 to 17.9 per-cent of the general population can be placed at the high end of the alexithymic continuum (Franz et al., 2007; Honkalampi, Hintikka, Tanskanen, Lehtonen, Viinamäki, 2000; Joukamaa et al., 2007; Mason, Tyson, Jones, & Potts, 2010; Salminen, Saarijärvi, Äärelä, Toikka, & Kauhanen, 1999). Alexithymia has been associated with impulsive aggression (Teten, Miller, Bailey, Dunn, & Kent, 2008), hostility and anger (Waldstein, Kauhanen, Neumann, & Katzel, 2002), alcohol use (Coriale et al., 2012; De Rick, Vanheule, Verhaeghe, 2009; Stasiewicz et al., 2012), and it has been shown to be a mediator between childhood trauma and self-harm (Paivio & McCulloch, 2004). Moreover, alexithymia has been linked to several mental disorders (Honkalampi et al., 2000; Honkalampi, Hintikka, Laukkanen, & Viinamäki, 2001; Maaranen et al., 2005; Pedrosa Gil et al., 2009; Waldstein et al., 2002; Webb & McMurrin, 2008).

Next to mental health issues, alexithymia is associated with physical diseases, such as diabetes type 1 (Chatzi et al., 2009) and diabetes type 2 (Avci & Kelleci, 2016). Avci and Kelleci (2016) explain that people with diabetes type 2 might experience alexithymia because of a fear to experience bodily sensations when their blood glucose level changes. However, the findings of other studies are inconclusive (Avci & Kelleci, 2016). Chatzi et al. (2009) propose that alexithymia might develop as a consequence of diabetes type 1 as it might impact the ability of emotional processing. Yet, more research is needed to support this suggestion (Chatzi et al., 2009). Furthermore, alexithymia has been linked to coronary disease and was identified as an independent risk factor for elevated cardiovascular mortality (Tolmunen, Lehto, Heliste, Kurl, & Kauhanen, 2010). However, further research is needed to clarify this relation (Tolmunen et

al., 2010). In conclusion, findings indicate that alexithymia is related to several mental and physical problems.

Besides, alexithymia has been recognised as being correlated with interpersonal problems (Besharat, 2010; Spitzer, Siebel-Jurges, Barnow, Grabe, & Freyberger, 2005; Vanheule, Desmet, Meganck, & Bogaerts, 2007), which have been found to be connected to distress in individuals (Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). More specifically, alexithymics seem to be impaired in their ability to classify facial emotional expressions (Kafetsios & Hess, 2019) and show lower activation in brain regions associated with social understanding (Moriguchi et al., 2006), which both might contribute to their difficulties to properly interact with other people. Furthermore, alexithymia has been linked to insecure attachment (Troisi, D'Argenio, Peracchio, & Petti, 2001; Wearden, Cook, & Vaughan-Jones, 2003), lower levels of relationship satisfaction (Humphreys, Wood, & Parker, 2009), distrust (De Rick & Vanheule, 2007; Holder, Love, & Timoney, 2015), and other interpersonal correlates (Fukunishi, Berger, Wogan, & Kuboki, 1999; Kokkonen, Karvonen, Veijola, Läksy, & Jokelainen, 2001; Waldstein et al., 2002). In sum, there are indications that alexithymia can be a source of significant distress and problems for both the alexithymic individual and the people around him/her.

In order to deal with stressors such as interpersonal problems, humans employ coping behaviours which can be categorised into coping styles. There are three forms of coping styles: problem-focused coping, emotion-focused coping (Lazarus & Folkman, 1984), and avoidance-focused coping (Krohne, 1993). Problem-focused coping responses represent actions to either reduce stress or advance the abilities to handle stress (Besharat, 2010). In contrast, avoidance-oriented coping strategies are applied to withdraw oneself from the source of the stressor. Emotion-focused coping depicts actions executed to alter the meaning of a stressor and to reduce the negative emotions the stressor elicits. Higgins and Endler (as cited in Parker, Taylor, & Bagby, 1998) found that problem-focused coping generally is an adaptive way of managing stress, whereas emotional-coping styles and avoidance-coping strategies can be maladaptive. Research indicates that people scoring high on alexithymia might be inclined to employ avoidance-oriented coping styles (Velasco, Fernández, and Páez, as cited in Velasco, Fernández, Páez, & Campos, 2006) as well as maladaptive emotion regulation strategies (Taylor, 2000). Besides, there is support that alexithymia is positively associated with emotion-focused coping responses and negatively with making use of problem-focused coping (Besharat, 2010). Thus, individuals with alexithymia seem to tend to use maladaptive coping styles.

The reason why alexithymics can have difficulties managing stress (Besharat, 2010) and are prone to employ maladaptive coping responses can be explained by the characteristics of alexithymia. As mentioned above, alexithymics are impaired in their ability to identify, make sense of, and communicate emotions (Nemiah, 1977; Sifneos, 1973). Hence, they are not as likely to approach another person for help and to balance their distress through identifying problems of stressful situations, evaluate these problems, and to find a way to solve these problems (Besharat, 2010). As a result, alexithymics rather employ emotional- or avoidance-focused coping strategies than problem-focused coping styles. Typical emotional- and avoidance-coping behaviours are, for example, expressing one's emotions, seeking emotional support (Morrison & Bennett, 2016), or, as Higgins and Endler (as cited in Parker et al., 1998) noted, being enraged, or distractive activities such as watching TV, eating, or social activities. Alexithymia has been associated with maladaptive coping behaviours such as alcohol abuse (De Rick et al., 2009; Stasiewicz et al., 2012), and binge-eating (Wheeler, Greiner, & Boulton, 2005). Based on this reasoning, it can be assumed that people scoring high on alexithymia are likely to employ avoidance-coping behaviours, especially when confronted with interpersonal problems. In other words, a moderation effect of alexithymia on the relation between interpersonal problems and avoidance-coping behaviours could be expected.

Another behaviour suggested as being a maladaptive coping response is binge-watching and its more severe form, problematic binge-watching. Binge-watching is defined as watching more than two episodes of a series in one sitting (Walton-Pattison, Dombrowski, & Presseau, 2016), whereas watching five or more episodes is considered as unhealthy binge-watching (De Feijter, Khan, & Van Gisbergen, 2016). There is evidence that the possibility to mentally escape from reality motivated participants to engage in binge-watching (Panda & Pendey, 2017; Rubenking, Bracken, Sandoval, & Rister, 2018; Vaterlaus, Spruance, Frantz, & Kruger, 2018). Additionally, Flayelle, Canale, Vögele, Karila, and Maurage (2019) found a positive relation between avoidance-coping and binge-watching. They also found a relation between binge-watching and negative affect. Thus, it makes sense that problematic binge-watching could be a way of coping for individuals.

Nevertheless, it is hard to define where binge-watching ends and problematic binge-watching starts, as the same amount of time watching a series could create problems for some people and not for others (Flayelle et al., 2019). Thus, Flayelle et al. (2019) suggest that binge-watching can be classified as problematic when it impedes the individual in his/her mental functioning and in several areas of his/her life. However, negative effects of binge-watching in its more unproblematic form should not be underestimated. Panda and Pendey (2017) found

that the more students binge-watched, the more they felt inclined to invest more time in binge-watching afterwards. As students' dependence to employ binge-watching as a way of mentally escaping reality rises, their ability to use more adaptive ways of coping decreases (Panda & Pendey, 2017).

Besides, prolonged television viewing has been associated with adverse health effects, such as diabetes type 2, cardiovascular disease and all-cause mortality (Grøntved & Hu, 2011) and with early onset of colorectal cancer (Nguyen et al., 2018). Moreover, binge-watching is a sedentary behaviour, which is defined as certain activities with a low involvement of energy that does not considerably exceed the resting level, such as sitting, lying or watching television (Pate, O'Neill, & Lobelo, 2008). There is evidence of a positive association between sedentary behaviours and one facet of alexithymia, namely difficulty communicating feelings (Helmers & Mente, 1999). Like binge-watching, sedentary behaviours have also been linked to several adverse health effects such as obesity and weight gain (Thorp, Owen, Neuhaus, & Dunstan, 2011), mortality caused by cardiovascular disease, and all-cause mortality (Thorp et al., 2011).

Even though alexithymia has been related to several maladaptive coping responses, to our knowledge, previous research did not explore if there is a relation between alexithymia and the coping behaviour of binge-watching, although it is a common avoidance-coping strategy. Alexithymia in relation to watching TV as a distraction has only been investigated as an item of the avoidance coping dimension of the 'Coping Inventory for Stressful Situations' (CISS; Endler & Parker, 1990). Thus, it has not been investigated in depth if alexithymia and binge-watching correlate. However, this could be crucial as alexithymia and binge-watching are both associated with the same health issues, such as diabetes type 2 (Avci & Kelleci, 2016; Grøntved & Hu, 2011) and coronary disease (Grøntved & Hu, 2011; Tolmunen et al., 2010). It could be assumed that the risk to be affected by these health issues is heightened for alexithymics who engage in binge-watching. Thus, it could have detrimental effects for individuals who both score high on alexithymia and cope with life stressors through binge-watching.

Moreover, as mentioned above, common stressors for alexithymia are interpersonal problems. Temporary findings in research indicate that there is a relation between maladaptive coping responses and alexithymia (De Rick et al., 2009; Stasiewicz et al., 2012), and between alexithymia and interpersonal problems (Besharat, 2010; Spitzer et al., 2005; Vanheule et al., 2007). However, the question remains whether there is a relationship between alexithymia, binge-watching as a coping style, and a common stressor in alexithymia, namely interpersonal problems. Therefore, the purpose of the present study was to investigate if alexithymia

moderates the relationship between interpersonal problems, as a stressor, and binge-watching, as a coping style.

Concluding from the above-stated reasoning, it is supposed that alexithymia moderates the expected positive association between interpersonal problems and binge-watching in the sense that this relationship is stronger for highly alexithymic people than for low alexithymic people. The first two research questions deriving from this are: ‘Does alexithymia moderate the relationship between interpersonal problems and binge-watching?’ and ‘Are interpersonal problems positively related to binge-watching?’. Additionally, it is assumed that alexithymia is positively related to interpersonal problems and that alexithymia positively relates to binge-watching. Research questions arising from this are: ‘Is alexithymia positively related to interpersonal problems?’ and ‘Is alexithymia positively related to binge-watching?’. To our knowledge, the relationship between interpersonal problems and binge-watching has not been investigated before. The research questions for the present research are:

1. Does alexithymia moderate the relationship between interpersonal problems and binge-watching?
2. Are interpersonal problems positively related to binge-watching?
3. Is alexithymia positively related to interpersonal problems?
4. Is alexithymia positively related to binge-watching?

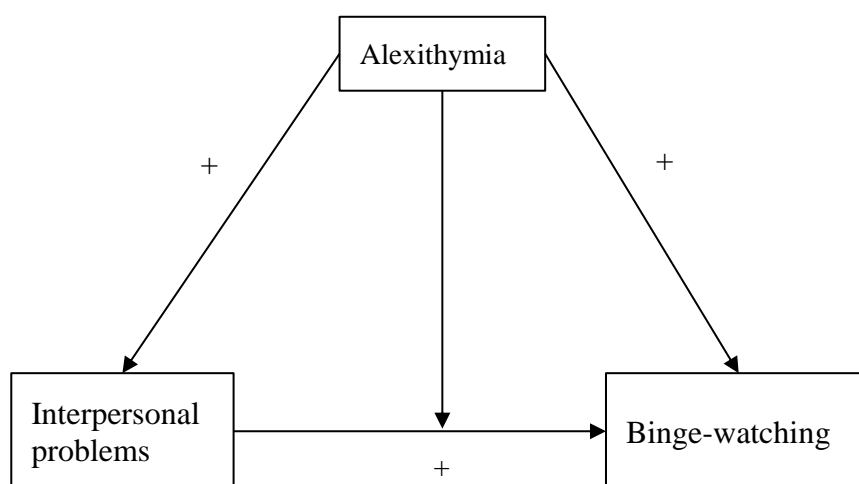


Figure 1. Hypothesised interactions in the current research.

Methods

Participants

In order to investigate the above-mentioned relationships, a cross-sectional online survey design was used. Furthermore, convenience sampling was employed to recruit respondents. One way to find respondents was by using the online platform ‘Sona Systems’ of the University of Twente, where students collect credits for participating in studies. Respondents received 0.5 credits for taking part in the study. Later on, the credits students received through participating in the study were adapted to 0.75 credit points as most respondents needed more time than expected to fill in the study. Other respondents were recruited in the researchers’ social environment. A link and a small text describing the study was sent to potential respondents via the online messaging service ‘WhatsApp’ (WhatsApp Inc., 2019). The texts sent to the receivers were phrased differently in each message, depending on how well the researcher knew the person she was texting. For an example of a message, see Appendix A. Additionally, some respondents sent the link to persons in their social environment. Further respondents were recruited using the ‘story’ option on the online platform ‘Instagram’. Thus, a picture of a short text (see Appendix B) was posted into the researchers’ ‘story’ and her followers on Instagram could click on it to view the picture. The link to the study was posted into the profile of the researcher as it was not possible to attach the link to the ‘story’.

The study had 136 respondents, of which 27 were excluded from the analysis. People were excluded if they did not complete the TAS-20, the IIP-C-IRT, the binge-watching subscale of the BWESQ and the question regarding binge-watching. Additionally, respondents who took less than 15 minutes to complete the whole survey were excluded from the analysis as serious completion of the questionnaire in this timeframe is questionable. This left 109 respondents that were included. Most of the respondents were female (65.1 %) and most had a German nationality (78.0 %; see Table 1). Moreover, the mean age was 22.21 (see Table 1).

Table 1

Descriptives of participants (N=109)

Category	Subcategory	Frequency	%	M	SD
Gender	Male	38	34.9		
	Female	71	65.1		
Nationality	Dutch	11	10.1		
	German	85	78.0		
	Other	13	11.9		
Age				22.21	5.37

N.B. M = Mean; SD = Standard Deviation.

Materials

Binge-watching Engagement and Symptoms Questionnaire

To measure the construct of binge-watching, the Binge-watching Engagement and Symptoms Questionnaire (BWESQ; Flayelle et al., 2019) and one of the questions developed by Walton-Pattison et al. (2016) were used (see Appendix C). This question was: ‘Thinking of the last time you watched more than two consecutive episodes of the same TV show in the same sitting during the last month, how many episodes of the same TV show (one after the other) did you watch?’. In scoring the test, watching more than two consecutive episodes is considered as binge-watching which is in accordance with the definition by Walton-Pattison et al. (2016). Response options for this question ranged from ‘I never watched more than two consecutive episodes’, ‘I watched 3 consecutive episodes’ up to ‘I watched more than 10 consecutive episodes’. In this research, if a participant watched less than three episodes, this was scored as 0 and watching three or more episodes was scored as 1. Moreover, a different variable was created, where having watched less than three episodes was scored as 1, watching three, four, and five episodes as 2, six, seven, and eight as 3, and nine, ten and more than ten episodes as 4. This was done to adapt the range of responses to the 4-point Likert scale of the BWESQ, as the binge-watching question was then added as an item to the BWESQ to simplify the analysis.

The BWESQ consists of 40 questions measuring seven different factors that make up problematic binge-watching. However, to keep the questionnaire as short as possible, only the six questions belonging to the factor ‘Binge-watching’ were included in this study. Example questions of this factor are ‘When an episode comes to an end, and because I want to know what happens next, I often feel an irresistible tension that makes me push through the next

episode' or 'I usually spend more time watching TV series than planned'. The more a person agrees with these statements, the more the person is engaging in problematic binge-watching behaviours. To calculate the total score of the subscale, the mean of the responses is computed. On the questionnaire, respondents indicate on a 4-point Likert scale from '1 = strongly disagree' to '4 = strongly agree' (M. Flayelle, personal communication, May 15, 2019) how much they agree or disagree with each item. In the current research, the scale was changed to ranging from '1 = disagree' to '4 = agree'. The 'Binge-watching' subscale has good internal consistency ($\alpha = .79$; Flayelle et al., 2019). In this study, the subscale of the BWESQ also showed good internal consistency ($\alpha = .84$). Adding the binge-watching question of Walton-Pattison et al. (2016) increased the internal consistency of the subscale ($\alpha = .85$). The item-total correlation of the added item was .47 and, hence, acceptable, as values above .3 are adequate (Field, 2014). Therefore, the item was added to the BWESQ for all analyses.

Toronto Alexithymia Scale-20 item version

In order to assess the construct of alexithymia, the Toronto Alexithymia Scale-20 item version (TAS-20) was presented to the respondents (Bagby, Parker, & Taylor, 1994; see Appendix C). The TAS-20 assesses the three factors that make up alexithymia. The first factor measures the difficulty to identify feelings (DIF), consisting of seven items. An example of the items of the DIF is 'I am often confused about what emotion I am feeling'. Factor 2 is composed of five items and assesses the difficulty to describe feelings to others (DDF). An item of the DDF is, for example, 'It is difficult for me to find the right words for my feelings.'. The third and last factor measures externally oriented thinking (EOT) through eight items. An example of an item belonging to this dimension is 'I prefer to analyze problems rather than just describe them'. On a 5-point Likert scale, ranging from '1= strongly disagree' to '5 = strongly agree', respondents have to rate 20 items (Taylor, Bagby, & Parker, 1997). Scoring was according to the manual. Thus, items 4, 5, 10, 18 and 19 were recoded. In this study, the total score on alexithymia was regarded. To calculate the total score, all responses to the 20 items are summed up. A score of 51 or less means that a person is not considered as alexithymic, a score between 52 and 60 indicates that the person is possibly alexithymic, and a score of 61 and greater means that the person can be classified as having alexithymia (Taylor et al., 1997). The separate scores of the three factors were not calculated. The questionnaire has a good internal consistency ($\alpha = .81$) and a good test-retest reliability of .77 (Bagby et al., 1994). In the current research, the internal consistency of the total TAS-20 was good ($\alpha = .81$).

Inventory of Interpersonal Problems-Circumplex IRT

Lastly, the Inventory of Interpersonal Problems-Circumplex IRT (IIP-C-IRT; see Appendix C) was used to measure interpersonal problems (Sodano & Tracey, 2011). The IIP-C-IRT consists of 32 statements about problems a person may experience. Respondents have to indicate on a 5-point Likert scale (from '0 = not at all' to '4 = 'extremely') whether each of these problems was apparent between themselves and a significant person in their life. The questionnaire consists of eight scales, each having four items. Examples of the items are 'It is hard for me to understand another person's point of view.' or 'It is hard for me to show affection to people.' In the present study, the total score of the inventory was used which is calculated by summing up all responses (Sodano & Tracey, 2011). The higher a person scores on the questionnaire, the higher is their level of experienced interpersonal problems. Calculated internal consistency of the subscales ranges from $\alpha = .62$ to $\alpha = .80$ and test-retest correlations from .60 to .74 (Sodano & Tracey, 2011). In the current research, internal consistency of the total IIP-C-IRT was good ($\alpha = .85$).

Procedure

This study was part of a collaborative research project in order to reach more potential respondents. Each researcher had an independent research question and included their questionnaires to the whole survey. Data were collected through the online platform 'Qualtrics'. Furthermore, ethical approval for the research was obtained from the ethics committee of the University of Twente.

The first contact with the respondents was initiated through convenience sampling in the researchers' social network, with continued snowball sampling as the respondents sent the study link to further persons. Moreover, the questionnaire was available for students of the University of Twente on the platform 'Sona Systems'. It was expected that it would take around 30 minutes to complete the questionnaire.

When respondents opened the questionnaire, first, the term 'alexithymia' and the purpose of the study were explained, and respondents had to agree with the informed consent to proceed (see Appendix D). Next, the questionnaires were presented to the respondents. First, questions about demographics, more precisely, age, sex, and nationality were asked which were mandatory to fill in. Then, the questionnaires were presented. The first questionnaire displayed was the TAS-20. The next one was the IIP-C-IRT, followed by the six questions belonging to the 'Binge-watching' dimension of the BWESQ. After this, the question by Walton-Pattison et al. (2016) about the number of consecutively watched episodes was presented. Following this,

six questionnaires were presented which do not relate to this study and for that reason are not further discussed here.

Data analysis

IBM SPSS Statistics 25 was used for the analysis. Negatively keyed items of the TAS-20 were recoded and the binge-watching question was recoded and added to the subscale of the BWESQ. Next, the mean scores and standard deviations of the demographic data, the binge-watching scale of the BWESQ, the TAS-20 and the IIP-C-IRT were calculated. Furthermore, the minimum and maximum values, skewness and kurtosis were determined. Sum scores of the TAS-20, IIP-C-IRT, and the mean score of the BWESQ were used in this analysis. Moreover, the frequency of the binge-watching question by Walton-Pattison et al. (2016) was calculated. Next, a reliability test of the three questionnaires was conducted using Cronbach's alpha. The correlations between the variables were analysed using Pearson's r , as the scores of all variables were normally distributed. The statement about normality was based on the skewness and kurtosis of the variables. Furthermore, bootstrapping was performed but did not have an effect on the results.

To analyse the moderation effect that alexithymia might have on the correlation between interpersonal problems and binge-watching, a regression analysis was performed using the software 'PROCESS macro' (Hayes, 2017; version 3.3) in IBM SPSS Statistics 25. 'PROCESS macro' was used for the regression analysis, as an advantage of the software is, that it automatically centres predictors and computes interactions, and it analyses simple slopes (Field, 2014). The following options were selected in PROCESS: 95% confidence intervals, 1000 bootstrap samples, conditioning values of -1SD, Mean, +1SD, heteroscedasticity-consistent inference HC3 (Davidson-MacKinnon), mean center for construction of products, generate code for visualizing interactions, and Johnson-Neyman output.

Results

Using the cut-off scores of the TAS-20 (Taylor et al., 1997), 7.3 per-cent of the respondents scored 61 and above and, hence, could be classified as having alexithymia. 26.6 per-cent of the respondents could be categorized as having possible alexithymia, as they scored between 52 and 60, and 66.1 per-cent had a score of 51 or less and, accordingly, did not have alexithymia. The mean of alexithymia ($M = 47.42$, $SD = 10.42$) additionally shows that on average, respondents did not have alexithymia (see Table 2). 88.1 per-cent of the respondents watched

more than two consecutive TV episodes and can, thus, be categorized as engaging in binge-watching during the last month. For more information on the descriptives of each questionnaire, see Table 2.

Table 2

Descriptive Values of alexithymia, interpersonal problems, and binge-watching (N=109)

	Skewness	Kurtosis	M	SD	Minimum	Maximum
Alexithymia	.63	.87	47.42	10.42	27	82
Interpersonal Problems	.95	1.12	42.96	15.45	9	92
Binge-watching	-.03	-.51	2.35	.71	1	4

N.B. M = Mean; SD = Standard Deviation.

The largest correlation found was a significant high correlation between interpersonal problems and alexithymia ($r = .55$; $p < .01$; see Table 3). Moreover, there was a moderate correlation between binge-watching and interpersonal problems and a small correlation between alexithymia and binge-watching. See Table 3 for more information on the results of the correlation analysis.

Table 3

Pearson correlation between alexithymia, interpersonal problems and binge-watching (N=109)

Variable	1	2
1. Alexithymia	-	
2. Interpersonal Problems	.55**	-
3. Binge-watching	.29**	.31**

N.B. **correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4, the model accounted for a significant but not very large amount of variance in binge-watching ($R^2 = .12$). This means that alexithymia and interpersonal problems account for 12% of the variance in binge-watching. There was no significant moderation found (see Table 4), which means that the level of alexithymia did not affect the relationship between interpersonal problems and binge-watching. The predictors were probably

not significant because of their high intercorrelation ($r = .55$), which might have led to multicollinearity. In sum, there were significant small to strong correlations between the variables, but no significant moderation effect was found.

Table 4

Multiple regression analysis for Binge-watching predicted by alexithymia and interpersonal problems

Variables	<i>b</i>	S.E.	t	Sig.	95% confidence interval for <i>b</i>	
					Lower bound	Upper bound
(Constant)	2.34	.07	32.00	.00	2.19	2.48
Interpersonal Problems	.01	.01	1.36	.18	-.00	.02
Alexithymia	.01	.01	1.60	.11	-.00	.02
Interpersonal problems x Alexithymia	.00	.00	.72	.47	-.00	.00

N.B. $R^2 = .12$, $F(3, 105) = 7.27$ $p < .01$; Interaction: $\Delta R^2 = .00$, $F(1, 105) = .52$, $p > .05$; *b* = unstandardized coefficient; S.E.= standard error.

Discussion

This study was aimed at investigating if there was a relationship between alexithymia, interpersonal problems, and binge-watching and whether alexithymia moderates the relationship between interpersonal problems and binge-watching. Alexithymia did not moderate the relationship between interpersonal problems and binge-watching. In other words, when people experienced interpersonal problems and were highly alexithymic they did not binge-watch more than a person having no alexithymia. The relationship between interpersonal problems and binge-watching was found to be moderate and positive. This means that there was an association between having interpersonal problems and engaging in more binge-watching. Thus, binge-watching might be a coping behaviour of people that experience interpersonal problems. The third finding was a strong, positive relationship between alexithymia and interpersonal problems. This means that the higher a person scored on alexithymia, the more interpersonal problems the person had. Besides, there was a small, positive relationship between alexithymia and binge-watching. This connotes that the higher a person scored on alexithymia, the more the person was binge-watching. However, as this

relation is small, there are probably other variables that explain more about the coping behaviour of alexithymics or what factors are associated with binge-watching.

The first outcome of the present research was that there was no moderation effect of alexithymia on the relationship between interpersonal problems and binge-watching, implying that the association between interpersonal problems and binge-watching is not different between people with relatively low or high alexithymia. It might be the case that alexithymics experiencing interpersonal problems prefer other coping behaviours than binge-watching. For example, Lyvers, Simons, Hayes, and Thorberg (2013) found that alexithymics scored higher on drinking as a way of coping than non-alexithymic individuals. Furthermore, Bruce, Curren, and Williams (2012) found that enhancement of emotions, social and coping motives fully mediated the association between alexithymia and alcohol consumption. The findings of these studies indicate that alexithymics might use alcohol as a means to feel more confident in social encounters (Thorberg et al., 2011; Thorberg et al., 2016) and to compensate the deficiency of emotional awareness in social situations (Bruce et al., 2012).

Additionally, Stasiewicz et al. (2012) found that the typical alexithymic drinker has a longing for escaping and avoiding situations of being unable to make sense of and describing negative feelings. Thus, alexithymics might use alcohol to deal with interpersonal problems, either to enhance their feeling of being socially competent or to use it as a way of escaping reality. Another explanation for the finding of the current research is that the moderation might not be found because of multicollinearity, as the strong positive correlation between the independent variables (interpersonal problems and alexithymia) might impede the multiple relationship with binge-watching.

The finding of a moderately strong positive relationship between interpersonal problems and binge-watching is a new scientific finding as, to our knowledge, this association has not been investigated before. Still, the outcome is similar to the results of studies focusing on interpersonal problems and other binge-behaviours. For example, Berkowitz and Perkins (1986) and O'Hare (1990) found that binge-drinkers had more social problems. Besides, Berkowitz and Perkins (1986) found that binge-drinking is employed as a way of coping and escapism, which is similar to the above-mentioned assumption that binge-watching is a means of escapism and coping with interpersonal problems. Furthermore, Brugnera et al. (2018) found that people with binge-eating disorder scored significantly higher on interpersonal problems than the obese and control group. Likewise, Lo Coco, Gullo, Salerno, and Iaconopelli (2011) found a relation between interpersonal problems and binge-behaviours. Moreover, Ivanova et al. (2015) and Hopwood, Clarke, and Perez (2007) found a medium correlation between

interpersonal problems and binge-eating symptoms. Considering the results of these studies, the current finding expands the empirical evidence of a positive relationship between interpersonal problems and binge behaviours.

The finding of a strong, positive relationship between alexithymia and interpersonal problems is in accordance with previous research. Besharat (2010) found that people scoring high on alexithymia had more interpersonal problems than low and non-alexithymic students. Moreover, Vanheule et al. (2007) found an association between alexithymia and interpersonal problems in the sense that people with alexithymia distance themselves, have little affection for people, are passive in social encounters and have limited apprehension for expressing their own necessities and interests to others. Furthermore, the present result fits to the outcomes of other studies that showed that alexithymics seem to have problems with the emotional, cognitive or behavioural level of being or perceiving oneself as social (Fukunishi et al., 1999; Kafetsios & Hess, 2019; Kokkonen et al., 2001; Moriguchi et al., 2006; Waldstein et al., 2002) and, for example, insecure attachment (Troisi et al., 2001; Wearden et al., 2003) and distrust (De Rick & Vanheule, 2007; Holder et al., 2015).

The fourth finding of the current research was that alexithymia and binge-watching had a small, positive relation. This is in line with previous findings that alexithymia is positively associated with maladaptive coping behaviours (De Rick et al., 2009; Stasiewicz et al., 2012; Taylor, 2000; Parker et al., 1998) and binge-behaviours (Pinaquy, Chabrol, Simon, Louvet, & Barbe, 2003; Wheeler et al., 2005). In the study of Parker et al. (1998), alexithymia was highly related to maladaptive coping. Thus, there might be coping responses that alexithymics prefer to employ over binge-watching, as discussed above in the paragraph about the non-existent moderation effect in the present research.

The current research has some limitations to consider. The first limitation is the length of the survey and the potentially resulting frustration of respondents. Even though the questionnaires used in this research were at the beginning of the survey, it is possible that respondents felt dissatisfied seeing the presented progress bar moving slowly. Hence, there is a chance that people completed the questionnaire less concentrated, which could have impeded the results. Even though respondents that spend less than 15 minutes on completing the survey were excluded from the analysis, there is still a chance that people did not have the same level of concentration during the whole survey.

A second factor that might have influenced the results is that the Likert scale of the BWESQ ranged from disagree to agree in the current research, although the developer of the scale described that it ranges from strongly disagree to strongly agree. Thus, it is possible that

respondents answered the questions differently than they would have when the range reported in the original article would have been used.

A further limitation is the question concerning binge-watching developed by Walton-Pattison et al. (2016), as it does not include the parameter of time of the duration of episodes. This seems inexact, as watching two episodes of a series in which each episode takes 60 minutes is not defined as binge-watching, whereas a person watching three episodes that take 20 minutes is considered as engaging in binge-watching. Hence, although the time invested is the same, one person is categorised as binge-watcher but the other one is not. This does not seem to be precise and to not correctly discriminate binge-watching from common watching of TV series.

However, the question of Walton-Pattison et al. (2016) had a positive effect on the subscale of the BWESQ, as it increased its reliability. Thus, even though the question seems to be imprecise, it showed to be useful to include this question into the study and can, therefore, be considered as a strength of the current research.

Another strength of the present research are the reliable measuring instruments used. The IIP-C-IRT, TAS-20, and the BWESQ are reliable questionnaires to measure the respective constructs they aim to measure. Moreover, this study extended the body of research on alexithymia, as, to our knowledge, the relation between alexithymia and binge-watching, and the association between interpersonal problems and binge-watching has never been investigated before. Likewise, the moderation effect of alexithymia on interpersonal problems and binge-watching has never been researched in the past.

Recommendations for future research are to shorten the survey to maximise the concentration of respondents completing the questionnaire. Moreover, it might be beneficial to include the whole BWESQ in the study to get a deeper insight into the construct of binge-watching and its facets. A further recommendation is to stick to the response options used by the developer of the BWESQ to ensure scientific equality and being able to compare the results to other studies that used the questionnaire. Another recommendation is to include a question concerning the timeframe of binge-watching to overcome the above-mentioned limitation of the question by Walton-Pattison et al. (2016). A good option for this is another question developed by Walton-Pattison et al. (2016) which concerns how many hours a respondent spent watching the same TV show. It is advised to include this question in future studies.

As the current research did not find a moderation effect of alexithymia and as there was only a small correlation between alexithymia and binge-watching, it might be useful to further investigate maladaptive coping behaviours in alexithymics to determine which other behaviours than, for example, drinking, are often employed by alexithymics. Moreover, future research

could investigate which coping behaviours alexithymics employ to specifically cope with interpersonal problems. This is important, as therapy methods could be adapted to this, both to prevent physical illnesses that might follow maladaptive coping and to facilitate more adaptive coping behaviours in alexithymics. All in all, more research should be aimed at investigating these relationships in order to make therapy more impactful and to enhance the quality of day-to-day living in alexithymics.

To sum it all up, the aim of this study was to investigate whether alexithymia moderated the relation between interpersonal problems and binge-watching. The relations between alexithymia, binge-watching and interpersonal problems were also researched in the study. The present study extended the scientific knowledge of coping behaviours in individuals with alexithymia, as it was identified that scoring high or low on alexithymia did not have an effect on the association between interpersonal problems and binge-watching. This suggests that alexithymics probably employ other coping strategies when experiencing interpersonal problems. Other empirical findings were the positive, moderate relation between interpersonal problems and binge-watching, and the small, positive relation between alexithymia and binge-watching. These results added to existing research as these associations have not been investigated before. The present study's findings and implications give useful information on how to deepen empirical knowledge on alexithymia and employed coping behaviours in future research.

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Appendix A

“Hey! I am in need of participants as I am currently working on my bachelor’s thesis. If you would fill in my survey I would be super grateful! It will take you about 30 minutes. Thank you so much!” This text was sent to a person the researcher did not know too well.

Appendix B

“Hey guys! I am currently working on my bachelor thesis and desperately searching for participants. So if you would fill in my questionnaire I would be super thankful! It will only take you about 30 minutes of your time. The link is in my Bio. Thanks a lot and happy Easter!”

Appendix C

TAS-20

Please answer each statement below by indicating your degree of agreement or disagreement with that statement. There are no right or wrong answers. There are five possible responses to each statement ranging from 'Strongly Agree' To 'Strongly Disagree'.

Please scroll down and press the arrow pointing to the right to proceed with the survey. The test will continue on the following page.

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
I am often confused about what emotion I am feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's difficult for me to find the right words for my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have physical sensations that even doctors don't understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to describe my feelings easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to analyze problems rather than just describe them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am upset, I don't know if I am sad frightened or angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am often puzzled by sensations in my body.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to just let things happen rather than to understand why they turned out that way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have feelings that I can't quite identify.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being in touch with emotions is essential.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
I find it hard to describe how I feel about people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People tell me to describe my feelings more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know what's going on inside me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often don't know why I am angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer talking with people about their daily activities rather than their feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to watch "light" entertainment shows rather than psychological dramas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is difficult for me to reveal my innermost feelings, even to close friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can feel close to someone, even in moments of silence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find examination of my feelings useful in solving personal problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Looking for hidden meanings in movies or plays distracts from their enjoyment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

IIP-C-IRT

This is a list of problems that often come up when dealing with other people. Please read each problem in the list carefully and think about whether it has been a problem for you with any significant person in your life. Then click the answer that best describes how true each statement has been for you. There are no “right” or “wrong” answers. Please describe yourself as honestly as possible, we will keep your responses confidential. The test will continue on the following page.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
It is hard for me to understand another person's point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to put somebody else's needs before my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to feel close to other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to ask other people to get together socially with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to be assertive with another person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am too gullible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am overly generous to other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I open up to people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I argue with other people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to trust other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to give a gift to another person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to join in on groups.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to be firm when I need to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to be assertive without worrying about hurting others' feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all	A little bit	Moderately	Quite a bit	Extremely
I trust other people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I clown around too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to control other people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to get revenge against people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to show affection to people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to socialize with other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to confront people with problems that come up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to let other people know when I'm angry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to please other people too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to be noticed too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am too aggressive toward other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am too suspicious of other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to experience a feeling of love for another person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am too afraid of other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to be aggressive toward someone when the situation calls for it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I let other people take advantage of me too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I put other people's needs before my own too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is hard for me to stay out of other people's business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

BWESQ – Binge-watching subscale

Below you find statements about TV-watching behaviour. Please indicate how much you agree or disagree with each of these statements. The test will continue on the following page.

	Disagree	Somewhat disagree	Somewhat agree	Agree
I always need to watch more episodes to feel satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't sleep as much as I should because of how much time I spend watching TV series	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually spend more time watching TV series than planned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I cannot help feeling like watching TV series all the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When an episode comes to an end, and because I want to know what happens next, I often feel an irresistible tension that makes me push through the next episode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often need to watch the next episode to feel positive emotions again and to relieve frustration caused by the interruption in the storyline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Binge-watching question

Thinking of the last time you watched more than two consecutive episodes of the same TV show in the same sitting during the last month, how many consecutive episodes of the same TV show (one after the other) did you watch? The test will continue on the following page.

- I never watched more than two consecutive episodes
- I watched 3 consecutive episodes
- I watched 4 consecutive episodes
- I watched 5 consecutive episodes
- I watched 6 consecutive episodes
- I watched 7 consecutive episodes
- I watched 8 consecutive episodes
- I watched 9 consecutive episodes
- I watched 10 consecutive episodes
- I watched more than 10 consecutive episodes

Appendix D

Dear Participant,

You are about to participate in a research study about alexithymia. 'Alexithymia' can be defined as the way a person is or is not able to perceive and express his or her emotions or points of view. In this study, the relationship between alexithymia and other topics will be investigated, such as humour style, urges to self-harm and adaptive and maladaptive coping behaviours. The study is conducted by the psychology students Silke Hoffmann, Jan-Niklas Girth, Mirjam Römer and Linda Brumme from the University of Twente in order to complete their bachelor theses. You are asked to fill out a set of nine questionnaires. This will take approximately 30 minutes of your time. There is no wrong or right answer to any of the questions since all are a reflection of your perception. As the questions will inquire on your personality and behaviour, these questions can come across as confronting or sensitive for some people, although this is generally not to be expected for most.

If you do not wish to participate in this research you can close the survey at any time. If you want to stop participating during this survey close the survey on whatever page you reached. Data entered up on that point will be recorded and will be used for analysis. If problems of any sort occur, please contact the researchers via e-mail (see listed below).

Before continuing, please read the following statement and indicate whether you agree to take part in the study:

'I hereby declare that I have been informed in a manner which is clear to me about the nature and method of the research as described in the aforementioned introduction of the research. I agree with my own free will to participate in this research. I am aware of my right to retract this consent without the need to give any reason and I have been informed that I may withdraw from the study at any time. All information about me, that could lead to the identification of my identity in a direct or indirect way (including your IP-address) will be anonymized. If I request further information about the research, now or in the future, I may contact the researchers.'

Thank you for participating in our study!

The research team:

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I agree to take part in the study.