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Austrian Inmates' Personality Traits, Work-Related Attitudes and Behaviours, as Well as Their Association with Psychological Well-Being

The aim of this study was to examine possible age-related differences within an Austrian inmate sample, as well as dissimilarities with community-dwelling reference samples, concerning personality, work-related attitudes, and their influence on the inmates' psychological well-being. In total, 177 male inmates from 11 Austrian correctional facilities were examined in a cross-sectional questionnaire study. Differences in mean values were subsequently investigated. Regarding personality, inmates report higher conscientiousness and agreeableness but lower openness for experiences than non-prisoners. Additionally, a personality model characterised by high neuroticism, low conscientiousness, agreeableness and extraversion is associated with inmates' decreased mental health, whereas vocational resistance to stress along with positive emotionality seem to be protective factors. Overall, the results support the assumption of a dynamic inmate personality adapting to the prison environment, with certain manifestations of traits being strongly associated with mental health.

Keywords: age-related differences, attitudes towards work, inmates, personality, prison work, psychological distress

Persönlichkeitszüge und arbeitsbezogene Einstellungen und Verhaltensweisen österreichischer Inhaftierter sowie deren Zusammenhang mit dem psychischen Wohlbefinden

Ziel der Studie war es altersabhängige Unterschiede innerhalb einer Gefangenenpopulation, als auch im Vergleich zu nicht-inhaftierten Referenzstichproben hinsichtlich der Persönlichkeit, den Arbeitsbezogenen Erlebens- und Verhaltensmustern sowie deren Zusammenhang mit der psychischen Belastung der Inhaftierten, zu untersuchen. Insgesamt wurden 177 männliche Inhaftierte aus 11 österreichischen Justizanstalten, mittels fragebogenbasierter Querschnittserhebung untersucht. Die statistische Überprüfung etwaiger Unterschiede erfolgte anhand von Mittelwertsvergleichen. Hinsichtlich der Persönlichkeit wird deutlich, dass Inhaftierte eine höhere Gewissenhaftigkeit und Verträglichkeit sowie eine geringere Offenheit für Erfahrungen berichten als Nicht-Inhaftierte. Dabei geht ein Persönlichkeitsmuster, charakterisiert durch ausgeprägten Neurotizismus sowie reduzierte Gewissenhaftigkeit, Verträglichkeit und Extraversion, innerhalb der Gefangenenpopulation mit einer Zunahme der psychischen Belastung einher, wohingegen sich eine berufsbezogene Stressresistenz und positive Emotionalität als protektive Faktoren herauskristallisieren. Insgesamt untermauern die Ergebnisse die Annahme einer dynamischen Inhaftierten-Persönlichkeit, die sich nicht nur an die Gegebenheiten in Haft anpasst, sondern in gewissen Ausprägungen auch mit einer verbesserten psychischen Gesundheit einhergeht.

Schlagwörter: Altersbedingte Unterschiede; Einstellungen zur Arbeit; Gefängnisarbeit; Inhaftierte; Persönlichkeit; Psychische Belastung

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1. Introduction

Already at the beginning of criminological research, the question, whether there is a criminal personality or not, was an integral part of the scientific discourse, with the first theories being rather superficial. Whereas Cesare Lombroso believed that criminal behaviour is inherited, and criminals could be identified on the basis of physiological characteristics (Wolfgang, 1961), Sigmund Freud (Mannheim & Bernard, 2019) postulated that a failure of the superego, as consequence of an unsuccessful development of healthy and loving attachments to parents, leads to criminal acts. The first specified theory on the relationship between certain personality traits and criminal behaviour was formulated 1979 by Hans-Jürgen Eysenck. Generally, Eysenck described human personality primarily according to the dimensions extraversion and neuroticism (Eysenck, 1979; Goldsmith, 1982). The bipolar trait extraversion describes introvert behaviours and properties, such as being controlled and a reduced sociability on the one end, and impulsive, sociable, carefree extrovert persons on the other end (Borkenau & Ostendorf, 1993). In contrast, individuals with high values on the trait neuroticism can be described as emotionally unstable. Emotional instability manifests itself in the frequent occurrence of negative feelings such as nervousness, anxiety, and sadness. Furthermore, persons with high values in this trait tend to have unrealistic ideas and seem to experience difficulties in controlling their needs. On the contrary, emotionally stable persons appear to be calm, controlled and stress-resistant (Borkenau & Ostendorf, 1993). According to this theoretic concept, the risk for criminal behaviour is especially high within the group of emotionally unstable sensation seeking extroverts (Eysenck, 1979; Goldsmith, 1982). In later publications, neuroticism and extraversion were complemented by the dimension psychoticism (Eysenck & Eysenck, 1976).

Concerning the origin of these personality traits Eysenck (1979) preferred the view of a mostly biological determined human personality. He postulated that extraversion is linked with the arousal in the nervous system, with extroverts showing an innately under-arousal, so they seek stimulation in form of risky behaviours. Conversely, the innately over-arousal in introverts leads to the avoidance of further stimulation. As to the trait neuroticism, Eysenck (1979) assumed that it is correlated with the stability of the sympathetic nervous system. Whereas the overactive sympathetic system of neurotic personalities leads to quick reactions and negative interpretations of the environment, the sympathetic system of stable individuals is unreactive, enabling them to remain calm even under pressure. These hypotheses are partly supported by correlation studies in monozygotic and dizygotic twins. Loehlin (1992) found high correlations of above .40 for neuroticism and extraversion in monozygotic twins, irrespective of being raised together or apart.

Both dimensions are later integrated into the Big-Five Personality Model, which additionally includes the traits openness for experiences, agreeableness, and conscientiousness (Borkenau & Ostendorf, 1993). In terms of this model, some researchers argue that delinquent behaviour develops due to a general lack of prosocial personality traits, which prevents those individuals from successfully overcoming versatile social tasks and challenges throughout the lifespan, leading to the use of antisocial strategies to satisfy their needs (Vila, 1994; Buss & Greiling, 1999). Wiebe (2004) on the contrary postulated negative associations with self-reported delinquency solely concerning the traits agreeableness and conscientiousness. Ultimately, latest research indicated that antisocial behaviour in general is correlated strongest with the high-order traits neuroticism, agreeableness, and conscientiousness. In detail, results

of a large meta-analysis pointed out that the traits agreeableness, especially the subscales compliance, straightforwardness, and altruism, alongside with conscientiousness, particularly its facets deliberation and dutifulness are strongly negatively associated with antisocial acts, whereas the neuroticistic subtraits angry hostility and impulsiveness are positively correlated with delinquent behaviour. In opposition, results concerning the trait extraversion are mixed. While the subtrait excitement seeking was positively, the subscale warmth was negatively associated to antisocial behaviour (Jones et al., 2011). O'Riordan and O'Connell (2014) found similar results in an analysis of the National Child Development Study, including longitudinal data of 17 634 British, Scottish and Welsh individuals born in one particular week in March 1958. The final study sample consisted of 7 205 community adults, with females and males evenly distributed. Regression analysis of self-reported data on criminal sanctions between the age of 33 and 42 and Five-Factor-Personality traits revealed a significant positive connection with extraversion and significant negative correlations with conscientiousness, agreeableness and emotional stability.

Although Loehlin (1992) discovered a solid biological predisposition of human personality, the influence of environmental factors on the development of criminal behaviour seems common understanding within criminological research, also indicating a certain variability of human personality traits. In their meta-analysis of research focusing on possible changes within personality Kostromina und Grishina (2019) pointed out that variations in the environmental factors (e. g. life-events) as well as individual experiences can initiate short-, medium- and long-term variations within the personality, promoting a dynamic understanding of a constantly changing personality. On the basis of this concept several recent international studies highlighted that inmates significantly differ from non-incarcerated community-dwelling and typical offender samples in most Big-Five-personality traits. Especially the dimension conscientiousness seems to be more pronounced within imprisoned populations when compared to community-dwelling samples (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019; Thiry, 2012; Trninic, Barancic & Nazor, 2008), which is underlined by similar results regarding the prison staff (Eriksson, Masche-No & Dåderman, 2017). Furthermore, results unanimously reported no significant differences between inmates and non-inmates concerning the trait neuroticism (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019; Thiry, 2012). In opposition, results on the remaining Big-Five-traits are mixed. On the one side there are studies indicating that extraversion, openness for experiences and agreeableness are significantly reduced within inmate populations **(**Eriksson, Masche-No & Dåderman, 2017), whereas other studies describe higher values on these traits, when compared to community samples (Shimotsukasa et al., 2019). Thiry (2012) even described no differences regarding extraversion, a reduced openness, and a higher agreeableness within a Belgian inmate sample. In accordance with the abovementioned results (Kostromina & Grishina, 2019), variations in differences between inmates and community references samples might be traced back to the prison environment, which globally attaches great importance, especially on the personality trait conscientiousness and its facets order, self-discipline, and dutifulness (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019). Differences between the studies might either be explained by the country-specific differences in prison settings, including treatment approaches, divergences in the study administration and data collection process or sample peculiarities (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019). Nevertheless,

longitudinal studies on the personality of offenders turning into inmates have not been published yet, for which reason it also remains unclear whether these changes are short- or long-term adaptions (Eriksson, Masche-No & Dåderman, 2017).
Additionally, the correlation of certain Big-Five-Personality traits and the experienced amount of psychological distress is well researched, indicating that particularly the personality trait neuroticism is strongly negatively correlated with mental health and the perception of negative emotions (e. g. Lamers et al., 2012; Kotov et al., 2010; Steel, Schmidt & Shultz, 2008). In their meta-analysis, Malouff and colleagues (2005) concluded that there is even a typical personality pattern, consisting of high neuroticism and low conscientiousness, agreeableness, and extraversion, associated with decreased mental health. On the contrary results regarding the trait openness to experiences mostly postulated no correlations with mental health (Malouff et al., 2005), but positive associations with psychological well-being (e. g. Lamers et al., 2012).
Although work assignments are an integral part of prison life, little is known about the attitudes of inmates towards work. The idea of the corrective effect of work assignments in penitentiaries was implemented into correctional facilities very early. In the 18th and 19th century, penal work was the main aspect of serving a prison sentence, based on the assumption that laziness and idleness are the main triggers of criminal behaviour (Foucault, 1977; Giallombardo, 1966). In general, a number of international studies (e. g. Skardhamar & Telle, 2012; Uggen, 1999; Crutchfield & Pitchford, 1997; Huiras, Uggen & McMorris, 2000) confirm the protective effect of post-release employment. Moreover, recent research also emphasized the importance of prison labour indicating a reduced rate of re-offending and re-incarceration in inmates participating in work, educational, and vocational programs during confinement (Duwe, 2017). Nevertheless, there are mixed results on the positive effects of prison work in particular. In regard to possible misconduct during incarceration there seems to be a negative correlation with work assignments in general (Gover, Perez & Jennings, 2008; Vuk & Dolezal, 2019), and with the weekly hours spent working (Steiner & Wooldredge, 2014). Results on the association with recidivism are cautiously optimistic. In their meta-analysis Wilson, Gallagher and MacKenzie (2000) found that, although the result was not statistically significant, there was a 10 % reduction of recidivism when inmates worked during imprisonment. Additionally, Saylor and Gaes (1997) pointed out, that inmates engaging in prison labour show higher post-release employment rates, than detainees who refused to participate. Slightly better results concerning recidivism (Duwe, 2015) and employment rates (Duwe, 2015; Lamb and Goertzel, 1974; Witte, 1977) were reported for work-release programs. However, structured employment programs entailed the most promising outcomes, when compared to mere labour assignments (Duwe, 2017). Furthermore, there is strong evidence that the participation in structured and semi-structured activities enhances (Wooldredge, 1999), whereas idleness and isolation reduce not only inmates' well-being (Haney, 2003) but especially their mental health (Arrigo & Bullock, 2008; Haney, 2003; Kupers & Torch, 1999; Zamble & Porporino, 1988). With respect to age-specific differences, some studies reported that increasing time served is associated with a decline of psychological distress (Brown & Ireland, 2006; MacKenzie & Goodstein, 1985; Wormith, 1984; Zamble & Porporino, 1988; Goncalves et al., 2016) and an increase of well-being (Boothby & Durham, 1999; MacKenzie, 1987). On the contrary, other authors discovered negative correlations between mental health and time served within a group of inmates aged above 60 years (Meuschke & Jagsch, 2020). When comparing detainees of different age groups results revealed only marginal differences, in form of a slight decrease of psychological distress (Baidawi, 2016) or an increased somatization within elderly samples (Meuschke, 2018).

Sparked by these results penal systems around the world diversified and intensified their educational and vocational programs in order to react to the complex needs of modern inmate populations (for further information see e. g. Bammann et al., 2008; Vuk, 2017). Nevertheless, Lynch and Sabol (2001) concluded that the participation rate of inmates is steadily decreasing. Research focusing on the motivational aspects leading to the involvement in institutional programs and work assignments identified a variety of influential factors. One main aspect is that most western penal systems legally incorporated an obligation for inmates to work or participate in programs, penalizing those, who refuse to take part, with a withdrawal of benefits and privileges (e. g. § 44 Austrian Correctional Services Act; § 41 Abs. 1 German Prison Act; Haesen, Wangmo & Elger, 2018). Apart from that Vuk (2017) postulated that inmates use work and programs in order to cope with stress caused by the incarceration and described seven motivational factors relevant for the inmates' decision whether to engage in activities and programs or not. According to the author the search for social feedback, the enhancement of the peer status, the need for autonomy, privacy and safety, as well as the wish to improve oneself, and to escape from reality are weighted against each other during the decision-making process, also indicating age-specific differences in the relevance of certain factors (e. g. the need for privacy).

Although most authors identified a positive influence of social support and social ties inside as well as outside prison on inmates' well-being (Wooldredge, 1999; Cooper & Berwick, 2001; Gibbs, 1982), there are studies reporting no such association or even a negative correlation. Lindquist (2000) alongside with Hochstetler, Murphy and Simons (2004) postulated that the maintenance of social ties in- and outside prison does not increase the inmates' well-being. Instead, it seems to correlate with higher levels of depression, anxiety and hostility (Lindquist, 2000).

Based on these presuppositions the present study aims to examine possible age-specific differences within an Austrian prison sample in regard to the personality and the attitudes towards work, as well as possible dissimilarities with community-dwelling reference samples for the first time. In the second step, the correlation between personality and work-related attitudes and the inmates' mental health is further investigated. Aiming to not only contribute to answering the question, whether there is an inmate personality contrasting the offender personality or not, but to generate first evidence that certain personality traits, as well as work-related attitudes and emotions might favour a mentally healthy adaption to the prison environment, which could explain the development of certain personality traits during incarceration.

2. Methods

2.1 Data Collection

The study was conducted using three psychological test instruments in order to assess the level of psychological distress together with the personality of the study participants. Additionally, a self-report questionnaire was created to collect data on biographical information. The processing times of the test battery averaged between 45 and 60 minutes. Because of the questionnaire design, inmates with insufficient knowledge of the German language could not participate in the study and are therefore underrepresented within the sample. Possible participants were approached by psychological staff in the involved correctional facilities and given basic

information on the study, its aims, and the absence of any reimbursement. Afterwards the relevant documents were sent to the facilities and handed out to the participants by the psychological staff. Inmates willing to take part subsequently signed the informed consent and submitted it to the responsible staff member in person. Completed questionnaires were returned in closed, anonymized reply envelops either in person or via in-house mail. This assurance of confidentiality was implemented in order to reduce social desirability effects (e. g. Eriksson, Masche-No & Dåderman, 2017; Trninic, Barancic & Nazor, 2008). Due to pre-selection of participants, the design entails a certain selection or sampling bias regarding the subjects aged up to 59 years. With respect to the inmates aged 60 years and older, the sample includes one seventh of the total population at the time of data collection.

2.2 Instruments and Variables

The personality traits of the participants were assessed using the German version of the NEO-Five-Factor-Inventory (NEO-FFI, Borkenau & Ostendorf, 1993), which is frequently used in forensic contexts (e. g. Hansen et al., 2011; Zajenkowska et al., 2013). The German male calibration sample comprises 966 participants with a mean age of 28.85 years (SD=11.29). Because only 10 % of the sample was aged 46 years and older, age is clearly right-skewed distributed within the calibration sample. Based on 60 items rated on five-step Likert scales the individual characteristics concerning the traits Neuroticism, Extraversion, Openness for experiences, Agreeableness and Conscientiousness are assessed. The German version of the AVEM-44 (Arbeitsbezogenen Erlebens- und Verhaltensmuster; Saarschmidt & Fischer, 2008) was used to examine the inmates' attitudes towards work. The short form of this diagnostic tool consists of 44 items focusing not only on symptoms of psychological and physical distress, but also on the strategies used by subjects to cope with and actively shape challenging tasks and situations in the vocational context. Work related attitudes and behaviours are divided into 11 subscales (Perceived significance of work, Career ambition, Commitment, Striving for perfection, Emotional distancing, Tendency to resignation, Active coping, Balance and emotional stability, Work satisfaction, Life satisfaction and Perceived social support), which can be summarized into the three factors Commitment to work (Factor 1), Resistance to stress (Factor 2) and Positive emotionality (Factor 3). The 2003 cross-professional Austrian male calibration sample includes 711 participants with a mean age of 38.7 years (SD=8.3; Range=22;62) (Saarschmidt & Fischer, 2008). Although the AVEM was not applied to a prison sample yet, there are several international studies examining the work-related behaviours and experience patterns of correctional officers, supporting the application of this instrument in the correctional context (e. g. Kunst, 2011; Voltmer, Kieschke & Spahn, 2007). As stated by Saarschmidt and Fischer (2008) there were no age-related differences within the 11 subscales. The amount of psychological distress was assessed using the German version of the Brief Symptom Inventory in its 53-item version (BSI-53, Franke, 2000). Based on 49 of the 53 items nine different clinical pictures are evaluated on five-step Likert scales (Somatization, Obsession-compulsion, Interpersonal sensitivity, Depression, Anxiety, Hostility, Phobic anxiety, Paranoid ideation, Psychoticism). Adding the four leftover items focusing on single symptoms (Bad appetite, Difficulties falling asleep, Thoughts of death and dying, Feelings of guilt) a Global Severity Index (GSI) can be calculated. Afterwards raw scores are converted into T-values, with T-values of 63 or higher regarding either the GSI or two subscales indicating clinical relevance. The author

of the BSI already indicated its high validity within inmate samples (Franke, 2000), which is reinforced by the regularly usage in assessing the level of psychological distress of prisoners in recent studies (e. g. Dudeck et al., 2014; Otte et al., 2017; Pérez-Ramírez et al., 2021).

2.3 Data Evaluation

The statistical analysis was performed using IBM SPSS for Windows (Version 25). Nominally scaled variables are described with absolute and relative frequencies. Due to missing data, absolute frequencies must not add up to the total sample size. The mean (M), standard deviation (SD) and range (Min; Max) are used to described interval scaled variables. In case of skewed distributed variables, the median (Mdn) was reported additionally. For the examination of possible age-specific differences the one factorial variance analysis (ANOVA) was used. Moreover, effect sizes (Eta^2-values) are provided for significant results. In accordance with the standards Eta^2-values >.01 are rated as small, Eta^2-values >.06 as moderate and Eta^2-values >.14 are rated as large effect (Cohen, 1988). In order to determine significant differences of means between the examined subgroups Bonferroni post-hoc-tests were performed. Possible differences between the means of the inmate and various reference samples were examined using one-sample t-tests. In case of significant results, the effect size was measured using Cohen's d. Following the standards, a value of >.20 is rated as small, values >.50 as moderate and values >.80 as large effect (Cohen, 1988). The level of significance was defined as $\alpha \leq .05$ but also tendentiously significant results ($\alpha \leq .10$) were interpreted. Scale and factor values of the AVEM-44 are reported as means, whereas t-values were used to describe the NEO-FFI and BSI-53-scales. Due to better comparability, NEO-FFI values of inmate and reference sample were compared on basis of their means.

2.4 Sample Characteristics

The data was collected in 11 Central and East Austrian correctional facilities, including facilities for pre-trail, short-, medium- and long-term detainees. The study was approved by the Ethics committees of the Austrian Ministry of Justice, as well as the federal states of Vienna, Lower and Upper Austria. Because of their special requirements and their mostly separated housing units, inmates with special therapeutic treatment needs, according to the § 21 of the Austrian Criminal Code, or in a pre-trail process for such a measure (§§ 429 and 430 Austrian Criminal Procedure Code), alongside with detainees with psychological peculiarities, as defined in § 129 of the Austrian Correctional Services Act, were excluded from the study.
In total 177 inmates completed the provided questionnaires. In order to take recent developments in worldwide inmate populations into account, the sample was divided into three different age groups. Latest research clearly underlines the increase of elderly detainees, as well as their special treatment- and housing-needs, when compared to younger inmates (e. g. ACLU, 2012; Baidawi & Trotter, 2015; Hayes et al., 2013; Marti et al., 2014; Meuschke, 2018). The age-cut-offs were defined in consideration of the psychological (e. g. Fazel et al., 2001; Howse, 2003) and the social functioning (Schramke, 1996) of the participants. Group 1, the youngest subgroup, comprises the inmates aged between 20 and 39 years, whereas the inmates at the age between 40 and 59 years form the second, middle-aged subgroup. The elderly subsample

includes the inmates aged 60 years and older. The great majority of the elderly subgroup was in their sixties (44 persons, 80.0 %), 10 inmates were in their seventies (18.2 %), and one participant was over 80 years old (1.8 %). Further characteristics of the sample can be gathered from Table 1.

Table 1. Sample characteristics (N=177)

	N	(%)	M	SD	Mdn	Range
Age (years)						
Sample	177	(100)	47.24	16.16	-	20;82
Group 1	63	(36)	29.33	5.70	-	20;39
Group 2	59	(33)	48.41	5.51	-	40;59
Group 3	55	(31)	66.49	5.32	-	60;82
Age at first conviction (years)	170	(96)	29.08	16.37	21	9;73
Number of prior convictions	170	(96)	6.74	7.27	5	0;35
Number of prior incarcerations	170	(96)	3.64	4.15	2	0;33
Duration of incarceration (month)	158	(89)	44.99	66.99	22	1;480

	N	(%)		N	(%)
Marital status			Delinquency within family		
Single	67	(40)	Yes	37	(23)
Married / in Relationship	53	(31)	No	123	(77)
Divorced	42	(25)	Missing	17	
Widowed	6	(4)			
Missing	9				
Highest school qualification			Index offense		
None	9	(5)	Violent / Sexual offense	76	(43)
Secondary modern school	42	(25)	Other	99	(57)
Vocational school	94	(56)	Missing	2	
A-level	14	(9)			
University	8	(5)			
Missing	10				
Completed vocational training			Born in Austria		
Yes	113	(65)	Yes	124	(71)
No	60	(35)	No	50	(29)
Missing	4		Missing	3	

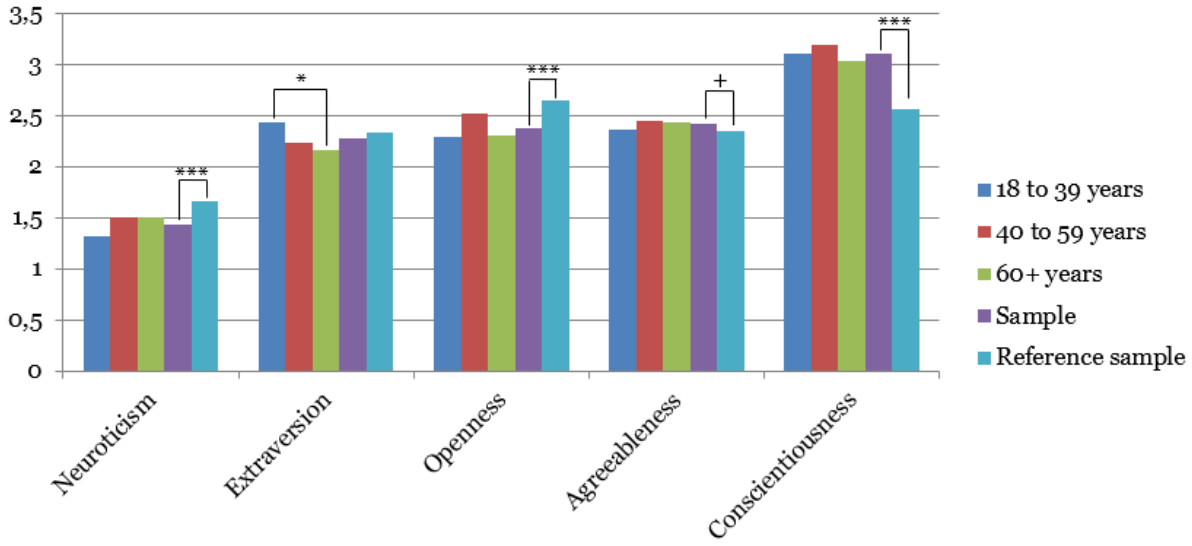
3. Results

The following section portrays the findings on the inmates' personality and their attitudes towards work. It separately reports age-related differences within the inmates sample, as well as with community-dwelling reference samples, and subsequently on possible associations with psychological well-being, of both examined spheres.

3.1 Peculiarities regarding the Big-Five Personality Traits

As to possible age-specific differences within the inmate sample concerning the Big-Five-personality traits, only one significant result was found (F[2,174]=3.985, p=.020, Eta^2=.044). The post-hoc-tests revealed significantly (p=.023) lower extraversion (M=2.161) within the elderly subsample than in the youngest subgroup (M=2.429). In a second step, the personality-traits of the inmate sample were compared to the German male calibration sample of the NEO-FFI (Borkenau & Ostendorf, 1993; N=966). Apparently, detainees stated significantly lower neuroticism (t[176]=-4.845, p<.001, d=0.36) and openness for experiences (t[176]=-7.172, p<.001, d=0.54), as well as significantly higher conscientiousness (t[176]=13.011, p<.001, d=0.98), when compared to the community-dwelling reference sample. Pertaining to the trait agreeableness the inmate sample reported tendentious significantly higher values (t[176]=1.708, p=.089, d=0.13). Solely relating to the dimension extraversion there were no significant differences between inmate and community-dwelling sample (t[176]=-1.381, p=.169). Figure 1 summarizes the significant age-specific differences in the Big-Five-personality traits within the inmate sample and in comparison, to the non-incarcerated reference sample.

Figure 1. Mean values and significant differences regarding the NEO-FFI scales of the three examined age groups, the total sample (N=177) and the community-dwelling reference sample (Borkenau & Ostendorf, 1993; N=966)



Note: $^{+}$p<.10, *p<.05, ***p<.001

3.2 Influence of Personality Traits on the Psychological Well-Being of Inmates

In order to examine possible correlations between personality traits and psychological well-being the sample was split into subgroups, according to the median of the respective personality trait. Results displayed in Appendix 1 clearly indicate that inmates with higher neuroticism and lower extraversion, agreeableness and conscientiousness showed significantly higher levels of psychological distress in almost every examined scale of the BSI-53. Only in relation

to the trait openness for new experiences, no significant differences in psychological stress were found.

3.3 Peculiarities regarding the Inmates' Attitudes towards Work

Results presented in Table 2 clearly show that the prison sample significantly differs from the calibration sample. Inmates reported significantly higher perceived importance of work (t[175]=4.43, p=.000, d=.333) and ability to emotionally distance from work (t[175]=3.18, p=.002, d=.239), as well as a tendential significant higher striving for perfection (t[174]=1.90, p=.059, d=.144) when compared to the community-dwelling sample. As to the scales' tendency to resignation (t[174]=0.04, p=.965), active coping (t[175]=1.31, p=.191) and balance and emotional stability (t[175]=0.22, p=.827), constituting the factor resistance to stress (F2), there were no significant differences. However, results highlighted that the aspects of subjective well-being (work satisfaction: t[175]=-13.23, p=.000, d=-1.01; life satisfaction: t[173]=-12.52, p=.000, d=-.947; perceived social support: t[172]=-7.81, p=.000, d=-.585) are significantly reduced within the inmate sample, with large effect sizes.

With regard to age-specific differences between inmate and community sample it becomes evident that inmates aged 39 and younger expressed significantly higher scores in the scales career ambition (t[61]=2.26, p=.028, d=.286) and emotional distancing (t[61]=3.83, p=.000, d=.482). Furthermore, the significantly reduced work satisfaction (t[61]=-9.92; p=.000; d=-1.244), life satisfaction (t[60]=-6.68, p=.000, d=-.850), and perceived social support (t[61]=-2.67, p=.010, d=-.339) seems particularly noteworthy. Inmates aged between 40 and 59 years showed similar results concerning the career ambition (t[58]=2.29, p=.025; d=.303), but additionally exhibited a significantly higher perceived significance of work (t[58]=4.07, p=.000, d=.523), a higher striving for perfection (t[57]=2.38, p=.021, d=.313), and tendentially significant higher scores on the scale active coping (t[58]=1.78, p=.080, d=.317) in comparison to the reference sample. In accordance with the younger subgroup the facets regarding work (t[58]=-6.61, p=.000, d=-.854) and life satisfaction (t[57]=-7.99, p=.000, d=-1.041), as well as the perceived social support (t[56]=4.07; p=.000, d=-.544) were significantly lowered. Within the elderly subgroup the perceived importance of work is still significantly higher (t[54]=-2.12, p=.039, d=.285) when compared to the references sample, but the career ambitions are tendential significantly reduced (t[54]=-1.75, p=.085, d=-.239). In line with the younger age groups work satisfaction (t[54]=-6.61, p=.000, d=-.881), life satisfaction (t[54]=-6.99, p=.000, d=-.938) and perceived social support (t[53]=-7.52, p=.000, d=-1.003) are significantly decreased. Also, within the inmate sample, age-specific differences were identified (see Table 2). As to the scale career ambition (F[2,173]=5.432, p=.005, Eta^2=.033) elderly inmates (M=12.67; SD=3.92) expressed significantly lower scores compared to the youngest (M=14.63, SD=3.59) or middle-aged group (M=14.63, SD=3.44). Concerning the ability to emotionally distance from work-related problems (F[([2,173]=3.493, p=.033, Eta^2=.076) the youngest participants (M=15.34, SD=3.37) reported significantly higher scores than the middle-aged subgroup (M=13.76; SD=3.40). In addition, results revealed significantly higher values (M=15.15, SD=3.11) on the scale perceived social support (F[2,170]=5.555, p=.005, Eta^2=.031) in comparison to the elderly subgroup (M=13.19, SD=2.95).

Table 2. Comparison of the means of the three age groups and the total sample with the Austrian reference sample

	Sample (n=176)		Below 40 years (n=62)		Between 40 and 59 years (n=59)		Over 60 years (n=55)		Reference[a] (n=711)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Commitment to Work (F1)										
Perceived significance of work	11.93***	4.3	11.39	4.2	12.59***	4.0	11.84*	4.7	10.5	3.4
Career ambition	14.02	3.7	14.63*	3.6	14.63*	3.4	12.67+	3.9	13.6	3.4
Commitment	13.28	4.0	13.53	4.0	13.63	4.3	12.62	3.8	13.0	3.2
Striving for perfection	15.96+	3.2	15.65	3.4	16.45*	3.0	15.80	3.2	15.5	2.8
Emotional distancing	14.51**	3.4	15.34***	3.4	13.76	3.4	14.36	3.2	13.7	3.2
Resistance to stress (F2)										
Tendency to resignation	9.61	3.5	9.39	3.2	9.86	3.7	9.58	3.6	9.6	3.0
Active coping	15.54	3.4	15.42	3.4	15.93+	3.2	15.25	3.8	15.2	3.0
Balance and emotional stability	14.65	2.9	14.47	2.8	14.41	3.1	15.11	2.8	14.6	3.1
Emotions (F3)										
Work satisfaction	12.07***	3.4	11.52***	3.2	12.51***	3.5	12.24***	3.7	15.5	2.8
Life satisfaction	13.30***	3.8	13.67***	3.8	13.05***	3.7	13.15***	4.0	16.9	2.6
Perceived social support	14.27***	3.3	15.15*	3.1	14.35***	3.4	13.19***	3.0	16.2	2.9

+p<.10, *p<.05, **p<.01, ***p<.001

[a] Male Austrian calibration sample from 2003 for AVEM-44 (Saarschmidt & Fischer, 2008)

3.4 Influence of Work-Related Attitudes on the Psychological Well-Being of Inmates

In order to examine the association of work-related attitudes and the mental health, inmates were split into two subgroups based on the median of the respective AVEM-factor. As displayed in Table 3 both aspects are strongly connected within the present sample. Regarding the facet commitment to work (Factor 1) results implied that inmates with high values in this factor report significantly decreased somatization, as well as obsessive-compulsive behaviour than inmates, who are less committed to work. Conversely, the scale resistance to stress (Factor 2) seems closely related with the psychological well-being of inmates in general. When compared to inmates reporting low scores on this factor, inmates with a higher resistance to stress reported significantly reduced scores on all subscales of the BSI-53, including the total amount of psychological distress. Lastly, results concerning a positive emotionality and perceived social support (Factor 3) also indicated that inmates with a positive attitude towards work and life as well as a sufficient social support expressed significantly less somatization, obsessive-compulsive behaviour, depression, psychoticism and seem to experience a lower total amount of psychological distress, than inmates with negative attitudes and limited social support did.

Table 3. Comparison of the inmates' psychological distress (BSI-53; t-values) depending on high or low values in the three AVEM-44 factors (means)

	Commitment to Work (F1)				**Resistance to stress (F2)**				**Emotions (F3)**			
	Low (n=88) M=60.44		High (n=87) M=78.89		Low (n=95) M=50.86		High (n=80) M=57.80		Low (n=86) M=33.16		High (n=86) M=45.94	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Somatization	57.94*	12.4	53.22*	12.5	56.84	12.6	54.15	12.7	58.17*	13.2	53.30*	11.7
Obsession-compulsion	52.65**	10.9	48.28**	10.2	52.39*	10.2	48.24*	11.1	53.00**	10.9	48.27**	10.1
Interpersonal sensitivity	53.26	10.4	54.18	10.4	55.25*	10.5	52.00*	10.2	54.70	11.2	52.98	9.7
Depression	56.90	11.3	54.37	10.5	57.41*	11.0	53.56*	10.7	58.10**	11.5	53.30**	10.0
Anxiety	53.48	12.3	52.18	11.1	55.53**	11.3	49.60**	11.4	54.36	12.6	51.59	10.7
Hostility	52.85	11.6	51.63	10.6	54.03*	10.9	50.10*	10.9	53.65	11.0	51.15	11.1
Phobic anxiety	51.01	10.1	51.29	9.0	52.34^{+}	10.0	49.86^{+}	8.8	52.01	10.3	20.38	8.7
Paranoid ideation	60.25	10.0	60.29	10.6	61.82*	10.2	58.39*	10.1	61.59	9.4	59.19	11.1
Psychoticism	57.17	11.5	57.08	11.0	58.89*	11.3	54.95*	10.8	59.84**	11.6	54.70**	10.2
Global Severity Index	57.60	12.7	55.72	12.8	59.41**	11.4	53.43**	13.5	59.68**	11.7	54.02**	13.2

$^{+}$p<.10, *p<.05, **p<.01, ***p<.00

4. Discussion

In the first part of the present study, age-specific differences in personality and work-related attitudes between young, middle-aged, and elderly inmates were examined before the prison sample was compared to community-dwelling literature-based norming samples. Afterwards the association of both aspects with the inmates' mental health was investigated. For this purpose, 177 male Austrian inmates out of 11 correctional facilities were assessed using self-description questionnaires.

As to the Big-Five-personality traits, results indicate a decrease of extraversion with increasing age, which was already described by the original authors of the NEO-FFI (Borkenau & Ostendorf, 1993). Because the application of questionnaires, especially in the forensic context, always raises the topic of socially desirable responding (e. g. McEwan et al., 2009), the replication of this result indicates a certain validity of the collected data. This appears to support the hypothesis that socially desirable responding does not affect the self-report validity in forensic contexts (Kroner, Mills & Morgan, 2005), particularly if confidentiality is ensured (e. g. Eriksson, Masche-No & Dåderman, 2017; Trninic, Barancic & Nazor, 2008). When compared to a community-dwelling reference sample several differences become obvious. Especially the personality trait conscientiousness seems significantly more pronounced within the inmate sample. On first sight this might appear striking, because the relationship of low conscientiousness and antisocial behaviour was repeatedly reported (e. g. Jones et al., 2011; O'Riordan & O'Connell, 2014; Wiebe, 2004). Opposed to this latest international research on inmates' personalities found strong evidence that prison samples show significantly higher values in this trait, when compared to community-dwelling samples (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019; Thiry, 2012; Trninic, Barancic & Nazor, 2008). In line with the idea of a dynamic personality, which is influenced by the environment (Kostromina & Grishina,2019), these authors assume that the strict code of conduct within correctional facilities leads to higher conscientiousness within the inmate population as well as within the prison staff (Eriksson, Masche-No & Dåderman, 2017; Shimotsukasa et al., 2019; Thiry, 2012; Trninic, Barancic & Nazor, 2008). This interpretation can also be applied to the present study. Particularly the results by Thiery (2012), who additionally described no differences regarding extraversion, a higher agreeableness, and a lower openness for experiences, were replicated within the Austrian sample (see Figure 1). Based on the assumption that differences between the studies result from country-specific settings, the strong overlap with Thiry (2012) indicates a certain comparability of Belgian and Austrian correctional environments. In opposition to above-mentioned research, neuroticism was significantly reduced in the present sample. Because this personality trait is relatively stable in adulthood (Roberts, Walton & Viechtbauer, 2006), this difference cannot be ascribed to the high mean age of the sample. Most likely the result is associated with the pre-selection during the sampling process, leading to an underrepresentation of psychologically highly distressed inmates, which, because of the strong positive correlation of neuroticism and mental health (e. g. Lamers et al., 2012; Kotov et al., 2010; Steel, Schmidt & Shultz, 2008), might have scored significantly higher on this trait (Eriksson, Masche-No & Dåderman, 2017). Furthermore, it should be noted that the inmate sample was compared with the reference sample of the NEO-FFI (Borkenau & Ostendorf, 1993) and not with an up-to-date Austrian sample. Nevertheless, these results clearly break

with the prejudice of an immutable criminal personality and underline the relevance of environmental factors concerning the development and prevention of criminal behaviour and antisocial personality traits.

As to the association of personality traits and mental health, results support the assumption that a certain personality is favouring a positive mental health within the prison environment, indicating that high neuroticism, low extraversion, agreeableness, and conscientiousness are accompanied by significantly higher levels of psychological distress in almost every examined scale. Solely the trait openness for new experiences was not associated with the inmates' mental health. This seems to replicate the results by Malouff and colleagues (2005), who postulated that this combination of traits and their specific characteristics correspond to the typical personality pattern associated with reduced mental health, including a lacking correlation regarding the trait openness for experiences. A possible explanation for the absent influence of this trait in this context might be the prison environment. Because of the clear structure and repetitive daily routines, inmates are lacking new experiences, which also manifest itself in reduced values in this trait when compared to a community-dwelling sample. Concerning the mental health this means that, in contrast to all other personality traits, a pronounced openness for new experiences does not bear any advantages or disadvantages within the prison setting, because after being incarcerated for a longer period, there are barely new experiences to make. Nevertheless, a possible correlation of this trait with the mental health of pre-trail or freshly incarcerated detainees cannot be fully excluded.

Inmates' work-related attitudes reveal some ecological valid age-related differences, although the authors of the assessment tool described no such differences (Saarschmidt & Fischer, 2008). The significant decrease in career ambition within the subgroup of elderly inmates can be related to these detainees already having reached retirement age. Therefore, there is no need for those inmates to strive for a career, as opposed to the younger subgroups, for which returning to a successful work environment is highly important. Similar results were found in large-scale community samples (Hertel et al., 2013). Nevertheless, work is significantly more important within the middle-aged and elderly subsample when compared to the Austrian reference sample (Saarschmidt & Fischer, 2008), indicating that work, despite of age, is still a vital part of prison life. This is generally underlined by the descriptive result that most of the elderly Austrian detainees still hold down a work assignment, although they are mostly exempted from the general obligation to work (Meuschke, 2018). In addition, several international studies focussing on psychological distress of elderly inmates highlighted the importance of work for this age group (e. g. Aday & Krabil, 2012; Baidawi, Trotter & Flynn, 2016). Within the subgroup aged 40 to 59 years the striving for perfection is especially high, whereas the youngest subsample reports the best ability to psychologically recover from work-related stress, when individually compared to the other age groups, as well as the reference sample. This supports the hypothesis of an increased vulnerability of elderly workers, because of an age-induced decline of mental and physical capabilities (Charles, 2010; Salthouse, 2012). All in all, these results clearly underline that, irrespective of age, work is an important part of prison routine. However, results of the AVEM-44 also highlight that there are age-related differences in the motivation to participate in prion work (Vuk, 2017) from which a need for age-specific employment opportunities can be derived. Especially the age-specific peculiarities regarding the commitment to work within the elderly subsample implicate, that the common performance-based piecework is less suitable for the approach most of these inmates express towards work. Depending on their physical conditions, elderly detainees with reduced physical abilities could be

employed in the library or the bookbindery, whereas elderlies that are physically more capable could be assigned to one of the regular prison jobs (Meuschke, 2018). In this context, Salthouse (2012) already pointed out that autonomous work enables older workers to better cope with their declining capabilities.

Although there are only marginal age-specific distinctions in the factor resistance to stress, differences between inmate and reference sample regarding the perceived social support and work as well as life satisfaction are striking. Concerning all three subscales, inmates report significantly lower values than the reference sample, with large effect sizes. According to the literature, the main reasons for low job satisfaction within prison samples are that detainees do not take pride in their work (Irwin, 1980) and that the skills developed in prison are only of low value in extramural vocational settings (Clemmer, 1940; Meisenhelder, 1985; Selke, 1993). Even though the AVEM-44 is designed for the vocational context, the subscale perceived social support assesses the work-unrelated feeling of warmth and security, as well as the perceived support of related parties (Saarschmidt & Fischer, 2008). Within the inmate sample, the elderly subgroup reported the lowest values regarding their perceived social support, which is in line with previous research (e. g. Aday & Krabill, 2012). This might be explained by a lack of age-adequate social contacts within the prison, as well as a reduced social network outside the facility (Aday & Krabill, 2012). Because most close relatives and friends are also in higher age, the amount of personal visits is particularly badly affected by long distances between the usual place of residence and the correctional facility (Aday & Krabill, 2012; Arditti & Few, 2006; Christian, 2005; Meuschke, 2018).

Regarding the relationship of work-related attitudes and mental health it becomes evident that especially the factors focussing on the inmates' emotional well-being are strongly negatively correlated with the amount of psychological distress. This clearly supports the assumption that social support plays an important role in increasing the inmates' mental health in general (Wooldredge, 1999; Cooper & Berwick, 2001; Gibbs, 1982) and is particularly relevant for elderly inmates in specific (e. g. Aday & Krabill , 2012; Baidawi, Trotter & Flynn, 2016) . These results highlight the need for appropriate possibilities to cultivate supporting social contacts in- and outside prison (e. g. Aday & Krabill , 2012). E specially since there are hints that visits by spouses or significant persons seem to have a positive impact on recidivism (Mears et al., 2011). Moreover, presents findings emphasise the importance of satisfying work assignments not only for rehabilitation, but also for the maintenance of inmates' mental health. Likewise, a strong connection with the inmates' mental health was found for the factor resistance to stress. In line with community-dwelling samples, active coping seems to decrease psychological distress caused by work (e. g. Parkes, 1990; Chang et al., 2006). Furthermore, some authors argue that because vocational environments limit the success of constructive individual actions, forms of collective coping are needed to deal with work-related stress (Pearlin et al., 1981; Shinn et al., 1984). This leads to the assumption that the ability to manage work-related stress also enables the inmates to better cope with the stressful prison environment in general, because of comparable constraints inherited with vocational and correctional surroundings.

Based on these results the conclusion can be drawn that age-adequate employment might lead to a higher work and life satisfaction, which consequently reduces the psychological distress of inmates, emphasising the importance of job assignments for all age groups within correctional facilities.

In general, the strength of the study lies in the versatile sample, including not only one seventh of all Austrian inmates aged 60 years and older at the time of data collection, but also different

types of correctional facilities, which speaks for a good transferability of the results to the general inmate population. Nevertheless, there are also some limitations. Due to the pre-selected questionnaire-design of the study, participation required certain knowledge of the German language, a certain cognitive capacity, and mental stability leading to the assumption of a certain selective bias. Furthermore, the study sample only included male participants, and therefore the results are not transferrable to female inmates.

In summary, the present study is in line with latest research, strengthening the hypothesis of a dynamic offender personality adapting to the prison environment during incarceration. Furthermore, the analysis revealed a certain personality pattern associated with decreased mental health, whereas a general resistance to stress and positive emotionality are positively correlated to the amount of perceived psychological distress. Based on these results the assumption, that the development of certain personality traits during incarceration favours a mentally healthy adaption to the prison setting, can be derived. However, this hypothesis needs to be further substantiated in future research. Finally, the present study clearly underlines the importance of prison work for all inmates, irrespective of age. Nevertheless, age-specific motivations and ambitions to participate are identified highlighting the need for the implementation of age-adequate employment opportunities into correctional facilities.

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Appendix 1.

	Neuroticism				**Extraversion**				**Openness for experiences**				**Agreeableness**				**Conscientiousness**			
	Low (n=95) M=23.64		High (n=82) M=35.82		Low (n=92) M=34.52		High (n=85) M=44.69		Low (n=96) M=36.12		High (n=79) M=45.75		Low (n=89) M=36.21		High (n=88) M=45.78		Low (n=89) M=43.91		High (n=88) M=54.80	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Somatization	51.75***	10.9	60.27***	12.9	58.11**	13.3	53.08**	11.3	54.67	12.7	56.92	12.6	58.49**	13.3	52.86**	11.2	57.78*	13.2	53.59*	11.7
Obsession-compulsion	47.24***	9.4	54.45***	11.0	52.52*	11.6	48.48*	9.4	51.43	11.7	49.23	9.4	52.76**	11.2	48.38**	9.8	54.63***	10.8	46.49***	9.1
Interpersonal sensitivity	48.62***	7.6	59.98***	10.0	56.41**	11.1	51.14**	9.0	53.49	10.5	54.14	10.5	55.87*	11.2	51.88*	9.3	55.53*	11.2	52.22*	9.4
Depression	50.92***	8.4	61.40***	11.0	58.87***	12.0	52.42***	8.7	56.42	11.7	54.80	10.1	58.27**	11.8	53.25**	9.5	58.25**	11.4	53.27**	10.0
Anxiety	47.52***	8.5	59.41***	12.0	54.96*	13.2	50.94*	9.8	53.68	12.2	51.80	11.1	55.91**	12.6	50.11**	10.3	56.47***	12.5	49.55***	10.1
Hostility	48.78***	10.1	56.54***	10.8	53.54	12.1	51.11	9.8	52.46	11.5	52.01	10.6	55.69***	11.5	49.02***	9.6	54.46*	11.5	50.26*	10.3
Phobic anxiety	47.26***	5.1	56.23***	11.6	54.12***	10.9	48.47***	7.3	51.14	9.7	51.72	9.9	54.48***	11.1	48.23***	6.9	52.57	11.4	50.22	7.7
Paranoid ideation	57.21***	9.9	64.09***	9.5	61.84	10.3	58.84	10.1	60.74	10.6	59.66	9.8	62.49**	9.9	58.27**	10.3	60.87	9.8	59.92	10.8
Psychoticism	52.19***	8.9	63.09***	10.8	60.59***	12.2	53.58***	8.8	57.60	11.6	56.61	10.8	59.93**	12.4	54.41**	9.1	59.39**	12.1	55.02**	9.8
Global Severity Index	50.98***	10.8	63.69***	11.4	60.25***	12.6	53.16***	11.9	56.63	13.8	56.75	11.5	60.56***	12.9	53.01***	11.6	59.74**	12.8	53.92**	12.1