DR ZEYNEP ZONP ÖZASLAN (Orcid ID : 0000-0001-9400-7825)

DR MARK HADDAD (Orcid ID : 0000-0002-4822-5482)

Article type : Original Article

Initial Psychometric Evaluation of the Physical Health Attitude Scale and a Survey of Mental Health Nurses

Running Title: Nurses' Attitudes to Physical Healthcare

Zeynep Özaslan[1]

Hülya Bilgin[2]

Suna Uysal Yalçın[3]

Mark Haddad[4]

[1]*Istinye University Turkey* [2]*Istanbul University-Cerrahpaşa Turkey* [3] *Kocaeli University Turkey*

[4]*City, University of London*

Correspondence: Zeynep Özaslan**,** 00905556651780, Istinye University, Health Science Faculty, İstanbul, Turkey.

Email: zznp@hotmail.com

Conflict of Interest: The authors have no conflict of interests.

Authorship statement: All authors listed meet the authorship criteria according to the latest guidelines of the International Committee of Medical Journal Editors, and all authors are in agreement with the manuscript.

Acknowledgements: -

Disclosure: Authors declare that there is no any financial support or relationships that may pose conflict of interest.

Ethical statements: The study was approved by the Ethics Committee of the Bakırköy Mental Health and Neurological Diseases Hospital (01.09.2015, No. 487).

*****This study was presented as an oral paper in 5th European Conference on Mental Health in Prague, Czech Republic, 2016.

ABSTRACT

Introduction: Nurses play an important role in improving the physical health of individuals with serious mental illnesses. The literature on the attitudes of mental health nurses towards physical healthcare provides a small amount of data. Assessing trends in nurses' attitudes through suitable surveys is important to ensure holistic care.

Aim/Question: This study sought to examine the Turkish version of the Physical Health Attitude Scale's (PHASe) validity and reliability and to survey Turkish mental health nurses' attitudes towards physical healthcare.

Method: The sample consisted of 174 nurses working in acute psychiatric wards. Firstly, the psychometric properties of the scale were analyzed using factor analysis and measures of

internal consistency and reliability. Then, the survey results of the attitudes of mental health nurses towards the physical health of patients with serious mental illnesses were determined using the Physical Health Attitude Scale (PHASe).

Results: The translated PHASe scale functioned best as a 24-item version and 4-factor solution that explains 51.3% of the variance. The internal consistency value was .83. The respondents' attitudes were generally positive about their role. There was less agreement for the involvement of nurses in practices of health promotion, such as sexual health, eye and/or dental examinations. The nurses surveyed also tended to use smoking for therapeutic purposes.

Implications for Practice: Mental health nurses' knowledge and attitudes should be enhanced by additional training in the ways of meeting patients' biopsychosocial needs. Obstacles to physical healthcare can be removed by implementing standard protocols nationwide.

Keywords: attitude, mental health, nurses, health, patients, surveys and questionnaires, delivery of health care, validity and reliability

ACCESSIBLE SUMMARY

What is known on the subject:

- A clear association exists between serious mental illness (SMI) and poor physical health.
- Individuals with SMI have markedly higher risks for mortality and morbidity.
- Mental health nurses play an important role in enhancing service users' mental and physical wellbeing.

- The attitudes of mental health nurses towards physical healthcare have been explored in the western part of the world. However, cross-country differences should be determined to reveal the importance of this global issue.

What the paper adds to existing knowledge:

- This study adds new data to the literature on the Physical Health Attitude Scale's (PHASe) validity and nurses' attitudes when working in acute mental health services in different cultures.
- Nurses in acute mental health wards mostly focus on the basic physiological indicators of patients' existing physical health problems, so health promotion practices such as sexual health, eye/dental examinations are neglected for individuals with SMI.
- Nurses' higher level of confidence about their delivery of physical healthcare is due to their familiarity with basic nursing practices (e.g. monitoring blood pressure and checking blood glucose levels).
- Differences that exist between countries in relation to smoking habits are probably due to different regulations.

What are the implications for practice:

- To improve patients' physical healthcare outcomes, nurses should be provided with additional training and supervision to strengthen their skills and confidence.
- Nurses' perceived need for additional training reflects the importance of physical healthcare in mental health settings, in which training could substantially improve patient outcomes.
- Authors believe that standard protocols must be established in acute psychiatric care to eliminate obstacles to holistic patient care.

- Training needs of mental health nurses on health promotion practices should be considered by administrators of mental health settings.

Relevance Statement: In this study, the attitudes of mental health nurses towards involvement in physical healthcare and smoking, their confidence in delivering physical healthcare, perceived barriers and negative beliefs were determined in terms of the physical healthcare of patients with serious mental illnesses. The study also provides a new validated scale that contributes to the national literature. Although emphasis has clearly been placed on mental health nurses' important role in the physical health of individuals with serious mental illness, the literature reveals that nurses' variable attitudes towards physical healthcare hinder the realization of this role. Attitudes towards health promotion practices need to be improved, in conjunction with the determination of which functional objectives should be implemented. The attitudes of Turkish mental health nurses included less involvement in health promotion practices, as well as their beliefs towards using smoking for therapeutic purposes reflected the needs of training. This study reveals the attitudes of nurses working in acute mental health wards towards the physical healthcare of individuals with serious mental illnesses within the framework of holistic care.

INTRODUCTION

A clear association exists between mental illness and poor physical health (Tylee & Haddad, 2007). Researchers have reported that individuals with serious mental illness (SMI) experience markedly higher levels of risk for medical morbidities and diminished life expectancy, which is typically reduced by around 15 years (Chesney, Goodwin & Fazel, 2014). Population studies show that circulatory diseases and cancer are the main causes of premature mortality in this population, accounting for between 77% and 90% of all deaths (Crump, Winkleby, Sundquist & Sundquist, 2013; Jayatilleke et al., 2017).

The excessive prevalence of physical health conditions evident among people with SMI appears to be due to a complex interplay of factors, including markedly higher rates of substance abuse, including tobacco (Royal College of Physicians & Royal College of Psychiatrists, 2013), alcohol and illicit drugs. The high incidence of unhealthy lifestyles, such as poor diets and insufficient exercise (Osborn, Nazareth & King, 2007), and the side effects of psychotropic medication (De Hert, Detraux, Van Winkel, Yu & Correll, 2012) also affect individuals with SMI. Each of these problems should be assessed and managed by health professionals.

This population's heightened risk of developing physical health problems has a serious impact on patients' ability to function, quality of life and life expectancy. Nonetheless, reviews and meta-analyses conducted in diverse settings clearly show that many patients are neither routinely screened nor monitored for physical comorbidities (Mitchell, Delaffon, Vancampfort, Correll & De Hert, 2012; Mitchell, Malone & Doebbeling, 2009; Royal College of Psychiatrists, 2014). These individuals also do not receive adequate health promotion and support for lifestyle changes (Mitchell, Vancampfort, De Hert & Stubbs, 2015).

The need to address physical health inequalities in people with SMI is clear. Initiatives have included incentives (Kontopantelis et al., 2015) and training programmes (Hardy, 2012) that have sought to improve primary and medical care for these individuals. However, researchers have identified various obstacles to optimal care in this context. These include limitations in knowledge and confidence (McBain et al., 2016), role ambiguities (Happell, Platania-Phung & Scott, 2014b) and overly complex presentations (Shefer, Henderson, Howard, Murray & Thornicroft, 2014).

Until recently, little attention has been paid to mental health nurses' role in and potential for addressing this major health disparity. Issues related to these nurses' adequate training in physical health needs have been identified by surveys conducted in inpatient settings (Howard & Gamble, 2011). Respondents have also included community-based nurses in the United Kingdom (UK) (Nash, 2005) and Australia (Happell, Stanton, Hoey & Scott, 2014a).

Surveys together with research based on interviews and focus groups (Dunbar, Brandt, Wheeler & Harrison, 2010; Happell, Scott, Nankivell & Platania-Phung, 2013a) have explored nurses' attitudes towards physical care, as well as their concerns about their knowledge and role. The results have revealed divergent views among the mental health nurses surveyed, who generally acknowledge the importance of physical healthcare and of the part nurses should play in this. However, the findings include variability in these professionals' confidence in their ability to monitor and promote patients' physical health (Happell et al., 2014b; Morrison, Mechan & Stomski, 2015; Robson et al., 2013a). Some studies have demonstrated that healthcare professionals have positive attitudes (Bartlem et al., 2016; Robson et al., 2013b; Wye et al., 2010), while other research has found the opposite (Hyland, Judd, Davidson, Jolley & Hocking, 2003). The attitudes and existing barriers of nurses restrain patients from taking the necessary physical healthcare. Therefore, it is important to seek the views of nurses to improve patient care and to increase the quality of care. Although physical care is an important part of the roles of nurses, the literature still provides a small amount of data on their views (Bressington et al., 2018; Çelik İnce, Partlak Günüşen & Serçe, 2018; Ganiah, Al-Hussami & Alhadidi, 2017; Happell, Stanton, Hoey & Scott, 2014a; Robson et al., 2013a; Siren, Cleverley, Strudwick & Brennenstuhl, 2018).

Mental health services in Turkey are mainly provided by the public sector, following hospital-based models. Eight regions were previously affiliated with the Ministry of Health, providing services to wide geographical areas and large populations. In 2011, Turkey was divided into 29 regions by the Ministry of Health in a reorganisation of all healthcare services, including patient beds. The goal was to reduce the number of beds and spread them across the country. Simultaneously, the reforms tried to change the health system to a community-hospital balance model by increasing the number of community mental health centres. Currently, the system includes approximately 170 community mental health centres. In hospital-based practice, the duration of hospitalisation in acute units is approximately two weeks. Blood pressure measurements and follow-up of weight control are important nursing activities within the area of physical health needs during care periods for patients using psychiatric services. Other physical health assessments (e.g. diabetes, cardiac disease, dental and gynaecological examinations) can be made as needed. In addition, patients are encouraged to exercise while in acute wards (Alataş, Kahiloğulları & Yanık, 2011). When the patient is hospitalized for acute conditions, mental health care often far overweighs physical care. Inpatient care in acute psychiatric units thus involves basic treatments and healthcare, due to increased risk for adverse effects related to medication and poor living conditions. Holistic care including physical health assessment, planning of care and health education should be handled in the scope of the knowledge, skills and roles of the nurse. Nursing degrees in Turkey prepare graduates for generic nursing jobs. Although programmes emphasise holistic nursing care, this approach is still neglected in psychiatric institutions. Nurses need to use their competencies in this crucial area to ensure practices that will improve physical healthcare since these professionals are directly involved in patient care. Knowledge, skills, attitudes and values play a role in widening the scope of competencies

(Fukada, 2018). Thus, priority should be given to determining which attitudes increase mental health nurses' competence and translation of knowledge into practice.

Various studies have explored the involvement of mental health professionals in and attitude towards physical healthcare in Asian countries (Bressington et al., 2018), UK (Howard & Gamble, 2011; Robson et al., 2013a), Jordan (Ganiah, Al-Hussami & Alhadidi, 2017), Turkey (Çelik İnce, Partlak Günüşen & Serçe, 2018) and Canada (Siren, Cleverley, Strudwick & Brennenstuhl, 2018). The attitudes of mental health nurses towards and practice of physical healthcare for patients with SMIs have rarely been studied in Turkey. A recently published qualitative study involving 12 nurses appears to be the only research on mental health nurses' opinions about physical healthcare in Turkey (Çelik İnce, Partlak Günüşen & Serçe, 2018). However, there are still no quantitative data to improve the physical health and needs of psychiatric patients that can be referred. There is also no standardized measurement tool to obtain this data.

To the best of our knowledge, there is only one commonly used scale in the international literature that determines the attitudes of nurses regarding physical health in psychiatric care (Siren et al., 2018). The Physical Health Attitude Scale (PHASe) is a measurement tool that provides a fuller understanding of mental health nurses' attitudes towards psychiatric patients' physical healthcare (Robson & Haddad, 2012). This scale reflects the multi-dimensional nature of mental health nurses' participation in physical healthcare, confidence while providing care, perceived barriers and attitudes towards smoking. To this end, the PHASe was used to evaluate the overall tendencies of nurses' attitudes towards the physical health of individuals with SMI in Turkey's largest psychiatric hospital, which was considered representative of the study population in terms of quality and quantity.

The rationale for this research's use of a standardised instrument was the urgent need to determine and quantify the key variables related to mental health nurses' attitudes. The PHASe's psychometric properties had been previously assessed by Robson and Haddad (2012) in a different setting from that in which the scale was developed, which provided additional evidence of its reliability in different cultural contexts.

Aim

The present study sought to examine the Turkish version of the Physical Health Attitude Scale's (PHASe) validity and reliability and to survey Turkish mental health nurses' attitudes towards physical healthcare.

METHODS

This research's results were compiled by following the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines (Von Elm et al., 2007).

Study design, setting and participants

The current study had a cross-sectional design. It was conducted in the Mental Health and Neurological Diseases Training and Research Hospital affiliated with the Ministry of Health in Istanbul, Turkey. All the registered nurses working in this hospital were invited to participate in the survey in face-to-face interviews. Hard copies of the questionnaire were distributed to the nurses who accepted the invitation to participate, so no random sample selection method was applied.

Mental health nurses' training in Turkey is similar to that of the United States (US), Australia and most European nations, starting with a 4-year generic registered nurse programme. The nurses working in mental health-related services ideally also have further

specialist post-graduate education, but generically qualified nurses can also take on these roles and receive in-service training. The data were collected between September 2015 and September 2016. A reminder message was sent to respondents, as needed, once a month through the head nurse of units.

Measure

The PHASe is a tool developed to measure mental health nurses' attitudes about their involvement in physical healthcare (Robson & Haddad, 2012). This 28-item scale was based on a literature review, focus groups made up of staff and service users and principal component analysis (PCA) of nurses' responses to the draft questionnaire (Robson & Haddad, 2012). The PHASe is a self-report instrument comprised of 4 sub-scales: (1) attitudes towards involvement in physical healthcare (10 items), (2) confidence in delivering physical healthcare (6 items), (3) perceived barriers to physical healthcare delivery (7 items) and (4) attitudes towards smoking (5 items). All items are scored on a 5-point Likert scale (1 = 'Strongly disagree'; 5 = 'Strongly agree'), and scoring is reversed for negatively worded items so that higher scores indicate more positive attitudes. The internal consistency (i.e. Cronbach's alpha) within the UK testing sample was .76 for the total scale. For sub-scale 1, the value obtained was .86, for sub-scale 2, .74, sub-scale 3, .67 and sub-scale 4, .61.

Questions on demographic characteristics focused on age, gender, education, duration of work experience in mental health and smoking status. Further items assessed whether respondents had ever had in-service physical healthcare training across a range of areas (e.g. diabetes management, smoking cessation, cardio-metabolic health, exercise and nutrition). Nurses were also asked whether their role prior to working in the psychiatric hospital predominantly involved physical healthcare (e.g. general hospital or medical settings). The questions related to involvement, in general, in and specific aspects of physical healthcare

practice were scored on a Likert scale ranging from 1 ('Never') to 5 ('Always'), while perceived training needs were rated as 'Yes', 'No', or 'Unsure'.

Ethical approval

The study was approved by human research ethics committee (01.09.2015, Project Reference Number: 487). Nurses were first given information about the research's details, and the respondents then gave their verbal and written consent. Participation was entirely on a voluntary basis. Respondents were also informed that they could contact the research team at any time for questions or to discuss the study.

Translation procedure

The translation process comprised the following steps based on Brislin's (1970) translation model. First, the scale was forward translated from English into Turkish by a bilingual expert. Second, a different bilingual expert blindly back-translated the scale from the Turkish version into English. Third, the two English versions – the original and the back-translated – were compared for semantic equivalence. Minor differences were detected in the back-translated version when it was compared to the original. Last, these differences in the scale were corrected by bilingual experts (Brislin, 1970).

The scale's final version was sent to the native author. After making minor changes proposed by the author, the bilingual experts were asked to review the scale again, and this version was accepted as the official version. Two mental health nursing academics and 10 mental health nurses evaluated this version in terms of clarity and intelligibility. The final Turkish version's content validity was confirmed by a pilot study with 20 mental health nurses at the selected hospital. The data from the pilot study were not included in the analysis as the purpose of conducting this was purely to examine the scale's feasibility.

Sample size calculation

One of the methods often used to calculate the appropriate sample size for factor analysis of a measurement instrument is to recruit between 5 and 10 respondents per item (Tabachnick & Fidell, 2013). The original instrument comprised 28 items, so a sample size of between 140 and 280 was needed. The available convenience sample's size (i.e. all mental health nurses working in the hospital) was 230, which meant that all these nurses were invited to participate.

Data analysis

The data were analysed using both Number Cruncher Statistical System 2007 and IBM Statistical Package for the Social Sciences Statistics for Windows Version 23 software. Descriptive statistics (i.e. mean, standard deviation [SD], frequency and percentage) were used to describe the sample's characteristics and nurses' current practices, perceived training needs, attitudes and confidence as measured by PHASe items. The Turkish PHASe's psychometric properties were analysed using exploratory and confirmatory factor analysis (EFA, CFA), which included orthogonal (i.e. varimax) rotation. Items with a factor loading lower than .30 were excluded from further analyses (Tabachnick & Fidell, 2013). Significance was assessed at $p < .05$ level.

In addition, the Kaiser-Meyer-Olkin (KMO) proficiency measurement and Bartlett's sphericity test were used to measure suitability for factor analysis. Cronbach's alpha was utilised to examine internal consistency, and item-total correlations were examined to determine item relevance or redundancy in the overall scale. For PHASe, intraclass correlation coefficient (ICC) were calculated for test-retest reliability (95% confidence intervals).

RESULTS

Participants

At the time of the present research, 230 registered nurses worked at the hospital. The first phase (i.e. the pilot study) was completed with 20 nurses randomly selected out of the study population. Of the 210 nurses asked to participate, 174 (83%) responded. The first 15 respondents' initial and follow-up ratings were used to examine the scale's test-retest reliability.

The nurses' mean age was 34 years (SD = 0.54) (see Table 1), three-quarters were female (75.9%), nearly half had a degree level education, while 119 (68.4%) had worked in nonpsychiatric settings prior to their current post. The average duration of the respondents' career in mental health was 7.3 years (SD = 0.52), and 42% of nurses were current smokers (50% of males and 39% of females). Almost all had previously received physical healthcare training.

Current practice

The respondents reported that making initial assessments, monitoring blood pressure and/or glucose and helping with personal hygiene were the most common physical healthcare practices (see Table 1 above). Ensuring regular eye examinations and patients' registration with family medical practitioners were the least frequent activities.

Perceived training needs

The respondents noted that they need more training on a range of topics. Assisting patients in managing their cardiovascular health was identified as the most important (54%), followed by helping patients with weight management (39%), smoking cessation (36%), physical exercise (38%) and cancer prevention (44%).

Validity and reliability testing of the PHASe

Construct validity and principal component analysis

Exploratory factor analysis (EFA) was used to perform construct analysis of the PHASe (Osborne & Fitzpatrick, 2012). The KMO value of sampling adequacy for the sample's responses is .80, indicating EFA's appropriateness (Cerny & Kaiser, 1974). Bartlett's sphericity test provided a *p*-value of < .001, so the null hypothesis could be rejected, and the factorability of the correlation matrix was supported (Sharma, 1996).

EFA using PCA with varimax rotation was conducted, and 4 components with eigenvalues exceeding 1 were identified (Girden & Kabacoff, 2010), which explained 51.3% of the variance observed. An examination of the correlation matrices indicated a potential 4-component solution, so 3-, 4- and 5-factor models were evaluated for theoretical and structural adequacy. Several items (i.e. 4, 14, 20 and 24) loaded weakly (> .30) in the analyses, so these items were removed from subsequent EFA iterations.

The final model included 4 components based on 24 of the original 28 items. This model explained 51.3% of the overall scale variance observed. The factor structure is mostly similar to that of the original instrument developed (Robson & Haddad, 2012). However, the fourth factor, rather than being related solely to smoking, combined several items (i.e. 7, 13 and 27) with items on negative and deterministic views of health promotion. The factor analysis matrix is presented below in Table 2.

Internal consistency

The Cronbach's alpha measure of internal consistency for the translated 24-item scale was .83, while the complete 28-item version's score was .82. The Cronbach's alpha of the sub-scales and the complete 24-item scale are shown in Table 3.

CFA

CFA indicated that a 4-factor solution was the model that best fit the data. The root mean square error of approximation was within the range of reasonable fit at .08 (Browne & Cudeck, 1992). The standardised root mean square residual was also adequate at .08 (Hu & Bentley, 1999), and the chi-square/degrees of freedom value was 2.19, which showed an acceptable fit (Hooper, Coughlan & Mullen, 2008). The analysis further revealed a consensus between the scree plot (see Figure 1) and model fit measures in favour of the 4-factor model.

Test-retest reliability

A sub-set of 15 respondents completed (Bujang & Baharum, 2017) the PHASe again after 2 weeks to enable the scale's test-retest reliability to be checked for this sample using an intraclass correlation coefficient (ICC) with 95% confidence intervals. Significant correlations were evident for each of the sub-scales, with scores ranging from .65 for perceived barriers to physical healthcare delivery to .97 for attitudes to smoking and negative beliefs.

Nurses' attitudes measured by PHASe

The extent of agreement for each item of the PHASe, with mean scores and SDs, is shown in Table 4. Regarding mental health nurses' attitudes towards involvement in physical healthcare (i.e. sub-scale 1), they were generally positive about their role. These professionals' confidence in delivering physical healthcare (i.e. sub-scale 2) had the highest mean value of all the sub-scales. The responses to items assessing perceived barriers to physical healthcare delivery (i.e. sub-scale 3) had the lowest mean value, which provides evidence of positive attitudes. Sub-scale 4 also showed a consistent mean value indicating positive attitudes about smoking and negative beliefs.

DISCUSSION

This study was the first to examine the attitudes of mental health nurses in Turkey towards providing physical healthcare to individuals with SMI, by using a validated measurement tool. With respect to the dual aims of this study, the first aim, which is the validity and reliability of the PHASe, was reached with several differences on total items including the number of items and the factor structure. Psychometric testing of the PHASe produced results indicating that the Turkish version functions appropriately and that it can be regarded as a valid and reliable tool, albeit with 24 rather than the full 28 items. While psychometric assessments of the scale showed that the translated PHASe had validity and reliability, some particularly significant findings were produced by factor analysis, specifically with EFA. The EFA results included some items (i.e. 1, 2 and 7) that load significantly on different factors at the same time. Although the difference between the factor loadings was less than .1, these items were not discarded from the scale as the factor loadings were optimal at the items' original locations (Fırat & Özden, 2015). Item 1 (Helping clients manage their weight should be part of mental health nurses' role) and item 2 (Giving nutritional advice to clients should be part of mental health nurses' role) assess attitudes towards involvement in physical healthcare. However, these items also took significant loads in terms of the second factor, which was associated with the nurses' self-confidence in delivering physical healthcare. In addition, in a recent study (Siren et al., 2018), item 2 received appropriate factor load on the 'perceived barriers to physical healthcare delivery' subscale rather than the 'attitudes to involvement in physical healthcare'. Also, item 1 was discarded from the scale (Siren et al., 2018). In this case, it is seen that the perceptions of nurses' regarding the roles related to nutrition issues can differ in different cultures. Results from different countries show that mental health nurses do not see counselling roles (i.e. giving nutritional advice) as part of their roles in acute psychiatric care (Siren et al., 2018).

While the fourth factor only covers attitudes towards smoking in the original scale, other items that assess negative attitudes related to health promotion were also combined with attitudes towards smoking in the present study. For this reason, this factor's name was changed, and it was reorganised into 'attitudes to smoking and negative beliefs'. The results thus indicate that cultural differences can affect items' factor loadings. In addition, factor loadings can be improved by increasing the sample size (Ximenez, 2016), so retesting the translated scale with larger sample may be necessary (Karaman, Atar & Çobanoğlu Aktan, 2017). Item 7 is a negative attitude statement related to nurses' health promotion role, which states that these nurses' role does not include confirming with clients whether they have had cancer screening checks. Notably, item 7 took the appropriate factor loading in terms of the first factor (i.e. nurses' attitudes to involvement in physical healthcare). Nonetheless, this item was kept on the scale focused on the fourth factor, in which an appropriate factor loading also appears, because of nurses' negative attitude towards this item.

When considering how to interpret the survey findings (the second aim of this study) on physical health with SMIs, Turkish mental health nurses show differences including monitoring glucose levels, assessing bowel habits, routinely checking weight and ensuring physical health. It is found that they do these practices more commonly at first contact than the mental health nurses in the UK (Haddad et al., 2016; Robson et al., 2013a). On the other hand, these findings are similar to the studies from three Asian countries (i.e. Qatar, Hong Kong and Japan) (Bressington et al., 2018) and from Jordan (Ganiah, Al-Hussami & Alhadidi, 2017). Some of this difference is probably related to the present Turkish sample being based entirely on nurses in an inpatient care setting, whereas other studies have recruited nurse participants from both inpatient and community-practice contexts. The current research's respondents focused on the basic physiological indicators of physical healthcare, which suggests that most nurses in the sample graduated from generic nursing programmes.

When interpreting the results of PHASe, researchers need to consider the environment in which nurses work. In Turkey, the Ministry of Health has not implemented a standard protocol for physical healthcare, which is also true of managers in the hospital in which the survey was conducted. After any significant change in patients' health status, collaborative treatment is provided. For example, when a patient's blood glucose rises, the relevant physician consultation is requested, and blood glucose levels are monitored. In addition, nurses can implement measures independently based on their existing knowledge. The most standard intervention is the physical health diagnosis provided when taking a medical history, which the hospital's administration has made compulsory, after which interventions are not continued unless a significant problem appears.

Regarding mental health nurses' attitudes towards involvement in physical healthcare, the respondents are generally positive about their role. However, they also reported less agreement with their role in eye and/or dental health checks and sexual health promotion for men. The survey's results for the nurses' current practices showed that oral/dental health and sexual health counselling were not on the list of the most common practices, while a few nurses (n = 42) routinely practice eye checks. The alarming truth is that nurses apply only basic skills in daily routines and that these professionals do not include health promotion activities in daily care. However, mental health nurses are especially well placed to address these important health needs because of their role and contact with mental health service users (Department of Health and Public Health England, 2016).

In addition, the present study found that health promotion practices are ignored. The lack of practice guidelines in the mental healthcare settings of Turkey may be a contributory factor for the lack of awareness of nurses, especially in certain areas such as sexual health, eye and/or dental checks. The current system provides support through in-service training programs, which could improve the attitudes of nurses. Based on the findings of the present

study, mental health nurses should be made more aware of the need for holistic physical and mental healthcare. In addition, nurse managers can better understand the attitudes, practices and training needs of these nurses, thus facilitating the first steps towards real, functional actions in the development of standard protocols.

The findings of this study showing the attitudes of nurses towards discussing sexual health with patients are similar to the international literature (Hughes, Edmondson, Onyekwe, Quinn, & Nolan, 2018; Quinn & Happell, 2015). It is thought that knowing the source of this negative attitude to sexual health is an important issue (Hughes et al., 2018). Overall, researchers have concluded that the intangible structure of sexuality concepts covers issues perceived as private, and nurses' lack of knowledge in this area is related to the inadequacy of and negative attitudes towards related practices (Quinn, Happell, & Welch, 2013; Hughes et al., 2018). Hughes et al. (2018) reports that nurses are aware of this role, but that they are reluctant to discuss due to possible risks, embarrassment or distress experiences. Quinn, Happell & Welch (2013) stated that mental health nurses tend to avoid discussing sexual issues, but with a brief training intervention, they became eager for this role. In Turkey, Sabancıoğulları et al. (2011) conducted a study in a university hospital, which included an evaluation of nurses' patient care plans in a psychiatric clinic according to the Functional Health Patterns model and North American Nursing Diagnosis Association (NANDA) diagnoses. The results revealed that the nurses collected the least data on sex and reproductive functions. Another study carried out in Turkey by Taşdemir and Kızılkaya (2013) sought to determine the nursing diagnoses frequently made by nurses enrolled in a mental health and psychiatric nursing programme. The findings included that no sexuality-related diagnoses are made. It is seen in the few studies conducted in Turkey that nurses have limited proficiency in this area (Sabancıoğulları et al., 2011; Taşdemir & Kızılkaya, 2013). In

addition, it is thought that the issues that cause concern for nurses about discussing sexual health identified in different cultures are valid for Turkish nurses as well.

An examination of the current sample's responses to the PHASe confirmed nurses' attitudes were mostly positive towards physical healthcare practices (e.g. giving advice on how to prevent heart disease [item 6], and helping clients manage their weight [item 1]). A significant number of nurses reported the need for training in related fields, which shows nurses' sensitivity to the problem.

The ratings of the respondents indicate levels of confidence in their delivery of physical care that are greater than those found by the studies in the UK, Asian countries (Bressington et al., 2018; Reilly et al., 2012), and in Jordan (Ganiah et al., 2017). A direct comparison of the current results with mental health nurses in Jordan was limited by differences in the way results were reported, but the findings indicated less of a divergence in views. The Turkish nurses' high level of confidence could also be related to in-service training programmes regularly offered as part of the hospital's protocol, which means nurses' practices are routinely supported by physical care education and training. These professionals' tendency to rely on their basic nursing skills may be due to Turkey's inadequate acceptance or a lack of awareness of specific mental health nursing roles in inpatient settings.

Attitude differences between UK and Turkish nurses were most pronounced in relation to perceived barriers to the provision of physical healthcare. Responses to all five attitude statements were markedly less positive than for the UK sample (Reilly et al., 2012). The greatest difference showed up in reference to two statements: 'My workload prevents me from doing any physical health promotion with clients' (63% agreement among nurses in Turkey vs 19% in the UK) and 'Clients with serious mental health problems are not interested in improving their physical health' (60% vs 16%). Several attitude items were

adapted for use in a study of mental health nurses in the US, with results similarly indicating more positive views than the present Turkish sample showed (Knight, Bolton & Kopeski, 2017). These nurses' negative attitudes could reduce the quality of care delivery, and, as a result, patients with SMI may miss out on receiving the appropriate nursing care – whether mental or physical. Nonetheless, mental health nurses' attitudes towards their involvement in physical healthcare were generally positive, even though staff shortages could make performing even the most basic physical care and/or promotion activities difficult. The additional problem of perceived barriers could be related to stigmatisation of mental illness and/or mentally ill people.

Pronounced differences in attitudes were also detected concerning smoking and smoking cessation. Nurses in the current sample were far more likely than UK and Asian nurses to feel that cigarettes could be used for therapeutic purposes and that patients should not be encouraged to quit. Nurses working in mental health units in Jordan reported similar views to those in Turkey about smoking's acceptability and therapeutic use, but the former sample were much more likely to endorse smoking being banned for both patients and staff on healthcare facilities' premises. In the present sample, approximately one-quarter of the nurses had a negative attitude towards smoking, and one-third asserted that they need additional training about smoking cessation. Compared to nurses in Asian countries (Bressington et al., 2018), for whom smoking habits ranged from 1% to 7% of the sample, and the UK nurses' 21% (Robson & Haddad, 2012), nurses in the current study were much more likely to be smokers (42%). This is related in part to higher rates of smoking in Turkey than in these other nations, although, apparently, the prevalence of smoking among nurses in Turkey exceeds the national rate of 27% (World Health Organisation, 2015). Previous studies show that the prevalence of smoking among nurses in Turkey exceeds the rate of 45% (Sezer, Guler & Sezer, 2007; Tezcan & Yardım, 2003).

The present sample of nurses further had negative attitudes about confirming with clients whether they have had cancer screening checks. These diagnostic procedures are usually performed by physicians, but nurses can play an important role in early diagnosis. Nurses' negative attitudes were reinforced by perceived barriers related to workloads preventing them from implementing health promotion practices and their low level of knowledge about the topic, especially as 44% of those surveyed noted the need for training in cancer prevention. These attitudes appear to be similar to those detected by previous studies (Ganiah et al., 2017; Howard & Gamble, 2011).

The measurement of the attitudes of mental health nurses towards providing physical healthcare with a reliable tool is the first stage of the practices that can be established to improve the attitudes of nurses. Furthermore, identifying their perceived barriers will provide insight about the care offered. Therefore, it is considered important to introduce the PHASe into practice. Thus, this study, which determines the psychometric properties of the scale, suggests that it is important and necessary to use the PHASe within the Turkish mental health context.

CONCLUSION

Study strengths and limitations

This study was the first to investigate Turkish mental health nurses' involvement and attitudes towards physical healthcare based on a validated measurement instrument. The research's design enabled a comparison of the findings with studies conducted in other settings, as well as an examination of changes within the same context over time and in relation to factors such as policies or education innovations. The factor analysis and reliability tests' results indicated the PHASe is suitable for measuring key factors relevant to

this important area of practice. The response rate of 83% obtained implies a low potential for bias due to non-response.

However, the convenience sample was based on respondents recruited from a single hospital in Istanbul, which is a key limitation. In addition, the sample comprised nurses who work in inpatient clinics, which constitutes another important limitation. These aspects of the research design limit the sample's representativeness and, therefore, the findings' generalisability to the wider population of Turkish nurses working in mental health care. However, the selected hospital is the largest mental health facility in Turkey.

This study's findings were also based on nurses' personal perceptions, thus potentially reflecting respondents' bias and making the provision of information difficult in terms of the level and accuracy of the nurses' current practices. Data on the content of trainings were limited to hospital protocols. A further methodological limitation was the total variance of 51.3% explained, which shows the instrument needs further improvement, although increasing the sample size could improve the results. Because this research used a cross-sectional design, the inferences that can be made about causality are limited. Nonetheless, the associations identified between attitudes, prior specialist training and involvement in physical healthcare concur with other studies' findings on this topic, providing a valuable basis for further investigations.

Findings

The present findings indicated that the PHASe is a valid and reliable measurement instrument in different cultures and that Turkish nurses working in mental health generally have positive attitudes towards physical healthcare. However, these professionals have negative views about some health promotion practices (e.g. cancer screening and eye checks). The respondents also noted that they need more training in managing cardiovascular health,

weight and smoking cessation. The findings include clear differences in smoking attitudes between countries. Turkish nurses showed a tendency to use smoking for therapeutic purposes. Thus, mental health nurses' knowledge, views and attitudes towards providing physical healthcare should be enhanced by additional training. Structured training focusing on a more holistic approach needs to be provided to help nurses care for all aspects of patients' health.

Relevance for mental health nursing

This paper adds to the existing knowledge about mental health nurses' attitudes towards providing physical healthcare to patients with SMI. The study's results contribute to the important discussion of data on first-time implementation of the PHASe in a different language. Nurses' attitudes are a crucial component encouraging the provision of physical healthcare that can enhance patient functionality, quality of life and life expectancy. For this reason, additional training for mental health nurses can be developed to strengthen nurses' positive attitudes. In addition, the present results highlight various barriers to providing physical healthcare, including inadequate training, an overly high level of confidence and conflicting role priorities. Training can be also be an effective way to encourage nurses to adopt mind-body integrity as part of their scope of practice.

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

Alataş, G., Kahiloğulları, A. K., & Yanık, M. (2011). Ulusal Ruh Sağlığı Eylem Planı (2011-2023) (National Mental Health Action Plan 2011-2023). Erkoç, Y., Çom, S., Torunoğlu, M. A., Alataş, G., & Kahiloğulları, A. K., (Ed.). Ankara: Publications of Ministry of Health.

Bartlem, K., Bowman, J., Ross, K., Freund, M., Wye, P., McElwaine, K., ... Wiggers, J. (2016). Mental health clinician attitudes to the provision of preventive care for chronic disease risk behaviours and association with care provision. *BMC psychiatry*, *16*(1), 57. https://doi.org/10.1186/s12888-016-0763-3

Bressington, D., Badnapurkar, A., Inoue, S., Ma, H. Y., Chien, W. T., Nelson, D., & Gray, R. (2018). Physical Health Care for People with Severe Mental Illness: the Attitudes, Practices, and Training Needs of Nurses in Three Asian Countries. *International Journal of Environmental Research and Public Health*, *15*(2), 3. http://dx.doi.org/10.3390/ijerph15020343

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, *1*(3), 185-216. https://doi.org/10.1177/135910457000100301

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assesing model fit. *Sociological Methods and Research* 21**,** 230-258. https://doi.org/10.1177%2F0049124192021002005

Bujang, M. A., & Baharum, N. (2017). A simplified guide to determination of sample size requirements for estimating the value of intraclass correlation coefficient: a review. *Archives of Orofacial Science*, *12*(1).

Cerny, C. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate Behavioral Research, 12*(1), 43-47. https://doi.org/10.1207/s15327906mbr1201_3

Çelik Ince, S., Partlak Günüşen, N., & Serçe, Ö. (2018). The opinions of Turkish mental health nurses on physical health care for individuals with mental illness: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, *25*(4), 245-257. https://doi.org/10.1111/jpm.12456

Chesney, E., Goodwin, G. M., & Fazel, S. (2014). Risks of all-cause and suicide mortality in mental disorders: a meta-review. *World Psychiatry*, *13*(2), 153-160. https://doi.org/10.1002/wps.20128

Crump, C., Winkleby, M. A., Sundquist, K., & Sundquist, J. (2013). Comorbidities and mortality in persons with schizophrenia: a Swedish national cohort study. *American Journal of Psychiatry*, *170*(3), 324-333. https://doi.org/10.1176/appi.ajp.2012.12050599

De Hert, M., Detraux, J., Van Winkel, R., Yu, W., & Correll, C. U. (2012). Metabolic and cardiovascular adverse effects associated with antipsychotic drugs. *Nature Reviews Endocrinology*, *8*(2), 114. https://doi.org/10.1038/nrendo.2011.156

Department of Health and Public Health England (2016). *Improving the Physical Health of People with Mental Health Problems: Actions for Mental Health Nurses.* Department of Health, London.

Dunbar, L., Brandt, T., Wheeler, A., & Harrison, J. (2010). Barriers and solutions to implementing metabolic risk assessment in a secondary mental health service. *Australasian Psychiatry*, *18*(4), 322-325. doi: 10.3109/10398561003692571

Fırat, E. A., & Özden, M. (2015). Developing a Scale for the Use of ICT through Scientific Process of Preservice Teachers. *Gazi University The Journal of Gazi Education Faculty*, *35*(1).

Fukada, M. (2018). Nursing Competency: Definition, Structure and Development. *Yonago Acta Medica*, *61*(1), 1.

Ganiah, A. N., Al-Hussami, M., & Alhadidi, M. M. (2017). Mental Health Nurses Attitudes and Practice Toward Physical Health Care in Jordan. *Community Mental Health Journal*, *53*(6), 725-735. https://doi.org/10.1007/s10597-017-0143-6

Girden, E. R., & Kabacoff, R. (Eds.). (2010). *Evaluating research articles from start to finish*. Sage.

Haddad, M., Llewellyn-Jones, S., Yarnold, S., & Simpson, A. (2016). Improving the physical health of people with severe mental illness in a low secure forensic unit: An uncontrolled evaluation study of staff training and physical health care plans. *International Journal Of Mental Health Nursing*, *25*(6), 554-565. doi: 10.1111/inm.12246

Happell, B., Scott, D., Nankivell, J., & Platania-Phung, C. (2013a). Screening physical health? Yes! But…: nurses' views on physical health screening in mental health care. *Journal of Clinical Nursing*, *22*(15-16), 2286-2297. doi: 10.1111/j.1365-2702.2012.04325.x

Happell, B., Stanton, R., Hoey, W., & Scott, D. (2014a). Development, validation and initial outcomes of a questionnaire to investigate the views of nurses working in a mental

health setting regarding a cardiometabolic health nursing role. *Archives of Psychiatric Nursing*, *28*(2), 123-127. https://doi.org/10.1016/j.apnu.2013.12.003

Happell, B., Platania-Phung, C., & Scott, D. (2014b). What determines whether nurses provide physical health care to consumers with serious mental illness?. *Archives of Psychiatric Nursing*, *28*(2), 87-93. https://doi.org/10.1016/j.apnu.2013.11.001

Hardy, S. (2012). Training practice nurses to improve the physical health of patients with severe mental illness: Effects on beliefs and attitudes. *International Journal of Mental Health Nursing*, *21*(3), 259-265. doi: 10.1111/j.1447-0349.2011.00800.x

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Articles*, 2.

Howard, L., & Gamble, C. (2011). Supporting mental health nurses to address the physical health needs of people with serious mental illness in acute inpatient care settings. *Journal of Psychiatric and Mental Health Nursing*, *18*(2), 105-112. doi: 10.1111/j.1365-2850.2010.01642.x

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Hughes, E., Edmondson, A. J., Onyekwe, I., Quinn, C., & Nolan, F. (2018). Identifying and addressing sexual health in serious mental illness: views of mental health staff working in two National Health Service organizations in England. *International Journal of Mental Health Nursing*, *27*(3), 966-974. https://doi.org/10.1111/inm.12402

Hyland, B., Judd, F., Davidson, S., Jolley, D., & Hocking, B. (2003). Case managers' attitudes to the physical health of their patients. *Australian & New Zealand Journal of Psychiatry*, *37*(6), 710-714.

Jayatilleke, N., Hayes, R. D., Dutta, R., Shetty, H., Hotopf, M., Chang, C. K., & Stewart, R. (2017). Contributions of specific causes of death to lost life expectancy in severe mental illness. *European Psychiatry*, *43*, 109-115. https://doi.org/10.1016/j.eurpsy.2017.02.487

Karaman, H., Atar, B., & Çobanoğlu Aktan, D. (2017). The Comparison of Factor Extraction Methods Used in Exploratory Factor Analysis. GUJGEF 37(3): 1173 – 1193

Knight, M., Bolton, P., & Kopeski, L. (2017). Providing physical care to persons with serious mental illness: Attitudes, confidence, barriers and psychological empowerment. *Archives of Psychiatric Nursing*, *31*(5), 447-453. https://doi.org/10.1016/j.apnu.2017.07.001

Kontopantelis, E., Olier, I., Planner, C., Reeves, D., Ashcroft, D. M., Gask, L., ... Reilly, S. (2015). Primary care consultation rates among people with and without severe mental illness: a UK cohort study using the Clinical Practice Research Datalink. *BMJ Open*, *5*(12), e008650. http://dx.doi.org/10.1136/bmjopen-2015-008650

McBain, H., Mulligan, K., Lamontagne-Godwin, F., Jones, J., Haddad, M., Flood, C., ... Simpson, A. (2016). Implementation of recommended type 2 diabetes care for people with severe mental illness–a qualitative exploration with health care professionals. *BMC Psychiatry*, *16*(1), 222. https://doi.org/10.1186/s12888-016-0942-2

Mitchell, A. J., Malone, D., & Doebbeling, C. C. (2009). Quality of medical care for people with and without comorbid mental illness and substance misuse: systematic review of comparative studies. *The British Journal of Psychiatry, 194*(6), 491-499. doi: 10.1192/bjp.bp.107.045732

Mitchell, A. J., Delaffon, V., Vancampfort, D., Correll, C. U., & De Hert, M. (2012). Guideline concordant monitoring of metabolic risk in people treated with antipsychotic medication: systematic review and meta-analysis of screening practices. *Psychological Medicine, 42*(1), 125-147. https://doi.org/10.1017/S003329171100105X

Mitchell, A. J., Vancampfort, D., De Hert, M., & Stubbs, B. (2015). Do people with mental illness receive adequate smoking cessation advice? A systematic review and meta-analysis. *General Hospital Psychiatry*, *37*(1), 14-23. https://doi.org/10.1016/j.genhosppsych.2014.11.006

Morrison, P., Meehan, T., & Stomski, N. J. (2015). Australian case managers' perceptions of mental health consumers use of antipsychotic medications and associated side-effects. *International Journal of Mental Health Nursing*, *24*(2), 104-111. doi: 10.1111/inm.12118

Nash, M. (2005). Physical care skills: a training needs analysis of inpatient and community mental health nurses. *Mental Health Practice, 9*(4), 20-24.

Osborne, J. W., & Fitzpatrick, D. C. (2012). Replication Analysis in Exploratory Factor Analysis: What it is and why it makes your analysis better. *Practical Assessment, Research & Evaluation, 17.*

Osborn, D. P., Nazareth, I., & King, M. B. (2007). Physical activity, dietary habits and Coronary Heart Disease risk factor knowledge amongst people with severe mental illness. *Social psychiatry and psychiatric epidemiology*, *42*(10), 787-793. https://doi.org/10.1007/s00127-007-0247-3

Quinn, C., Happell, B., & Welch, A. (2013). Talking about sex as part of our role: making and sustaining practice change. *International Journal of Mental Health Nursing*, *22*(3), 231-240. https://doi.org/10.1111/j.1447-0349.2012.00865.x

Quinn, C., & Happell, B. (2015). Consumer sexual relationships in a forensic mental health hospital: perceptions of nurses and consumers. *International Journal of Mental Health Nursing*, *24*(2), 121-129. https://doi.org/10.1111/inm.12112

Reilly, S., Planner, C., Hann, M., Reeves, D., Nazareth, I., & Lester, H. (2012). The role of primary care in service provision for people with severe mental illness in the United Kingdom. *PloS one*, *7*(5), e36468. https://doi.org/10.1371/journal.pone.0036468

Robson, D., & Haddad, M. (2012). Mental health nurses' attitudes towards the physical health care of people with severe and enduring mental illness: The development of a measurement tool. *International Journal of Nursing Studies*, *49*(1), 72-83. https://doi.org/10.1016/j.ijnurstu.2011.07.011

Robson, D., Haddad, M., Gray, R., & Gournay, K. (2013a). Mental health nursing and physical health care: A cross-sectional study of nurses' attitudes, practice, and perceived training needs for the physical health care of people with severe mental illness. *International Journal of Mental Health Nursing*, *22*(5), 409-417. https://doi.org/10.1111/j.1447-0349.2012.00883.x

Robson, D., Cole, F., Jalasi, S., Boojharut, B., Smith, S., Thompson, S., ... Haddad, M. (2013b). Smoking cessation and serious mental illness: a service evaluation of a drop-in stop smoking clinic on an acute in-patient unit. *Journal of Clinical Nursing*, *22*(3-4), 405-413. doi: 10.1111/j.1365-2702.2012.04222.x

Royal College of Physicians, Royal College of Psychiatrists (2013). *Smoking and Mental Health: Royal College of Psychiatrists Council Report CR178.* RCP, London.

Royal College of Psychiatrists (2014). *Report of the Second Round of the National Audit of Schizophrenia (NAS).* Health care Quality Improvement Partnership, London.

Sabancıoğulları, S., Elvan, E., Kelleci, M., & Doğan, S. (2011). Bir psikiyatri kliniğinde hemşireler tarafından yapılan hasta bakım planlarının Fonksiyonel Sağlık Örüntüleri Modeli ve NANDA tanılarına göre değerlendirilmesi. *Journal of Psychiatric Nursing*, *2*(3), 117-122.

Sezer, H., Guler, N., & Sezer, R. E. (2007). Smoking among nurses in Turkey: comparison with other countries. *Journal of Health, Population, and Nutrition*, *25*(1), 107.

Sharma, S., 1996. *Applied Multivariate Techniques.* John Wiley and Sons, Inc., New York

Shefer, G., Henderson, C., Howard, L. M., Murray, J., & Thornicroft, G. (2014). Diagnostic overshadowing and other challenges involved in the diagnostic process of patients with mental illness who present in emergency departments with physical symptoms–a qualitative study. *PLoS One*, *9*(11), e111682. https://doi.org/10.1371/journal.pone.0111682

Siren, A., Cleverley, K., Strudwick, G., & Brennenstuhl, S. (2018). Modification and initial psychometric evaluation of the Physical Health Attitude Scale for use in the canadian mental health and addictions context. *Issues in Mental Health Nursing*, 1-8. https://doi.org/10.1080/01612840.2018.1475523

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Harlow, United Kingdom: Pearson Education Limited.

Taşdemir, G., & Kızılkaya, M. (2013). Evaluation of NANDA nursing diagnoses of healthcare college final year students during the clinical application of the mental health and disease nursing course. *Journal of Human Sciences*, *10*(1), 246-257.

Tezcan, S., & Yardim, N. (2003). Prevalence of smoking between the doctors, nurses and medical faculty students at some health facilities in Turkey. *The Journal of Tuberculosis and Thorax*, *51*(4), 390-397.

Tylee, A., & Haddad, M. (2007). Managing complex problems: treatment for common mental disorders in the UK. *Epidemiology and Psychiatric Sciences*, *16*(4), 302-308. https://doi.org/10.1017/S1121189X00002487

Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & Strobe Initiative. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *PLoS Medicine*, *4*(10), e296. https://doi.org/10.1371/journal.pmed.0040296

World Health Organization (2015). *WHO Global Report on Trends in Prevalence of Tobacco Smoking 2015*. World Health Organization, Geneva http://apps.who.int/iris/bitstream/10665/156262/1/9789241564922_eng.pdf.

Wye, P., Bowman, J., Wiggers, J., Baker, A., Carr, V., Terry, M., ... Clancy, R. (2010). Providing nicotine dependence treatment to psychiatric inpatients: the views of Australian nurse managers. *Journal of Psychiatric and Mental Health Nursing*, *17*(4), 319-327. doi: 10.1111/j.1365-2850.2009.01524.x

Ximénez, C. (2016). Recovery of weak factor loadings when adding the mean structure in confirmatory factor analysis: a Simulation Study. *Frontiers in Psychology*, *6*, 1943. https://doi.org/10.3389/fpsyg.2015.01943.

Table 1 Sample Characteristics (n=174)

Variable	**n**	**%**
Gender		
Female	132	75.9
Male	42	24.1
Educational Background		
High School	16	9.2
Two-year Degree	34	19.5
Degree (baccalaureate)	85	48.9
Postgraduate	39	22.4
Smoking		
Yes	73	42
No	101	58
Undertaken in-service physical health care training		
Yes	160	92
No	14	8
Working in physical health care prior to current posts in mental health care		
Yes	119	68.4
No	55	31.6
	M	**SD**
Age	34	.54
The average duration of career in mental health (year)	7.3	.52

Current Practices	**No. of staff frequently involved (always/very often)**	
Monitoring clients' blood pressure	164	94.3
Assessing physical health condition of patients on admission	157	90.2

Helping clients' personal hygiene where necessary	152	87.4
Checking blood glucose level	143	82.2
Encouraging clients to eat healthily	140	80.5
Assessing clients' bowel habits	129	74.1
Checking clients' weight regularly	128	73.6
Helping clients manage their weight	121	69.5
Encouraging clients to exercise regularly	120	69.0
Checking if the clients are registered with family health centre	53	30.5
Ensuring clients have their eye checks.	42	24.1

n: frequency, %: percentages, M: mean, SD: standard deviation

Table 2 Factor analysis matrix (24 items)

	FACTORS				INITIAL EIGENVALUES	
ITEMS	**1**	**2**	**3**	**4**	**Total**	**% of Variance**
22 Ensuring clients have their eyes regularly checked by an optician should be part of the mental health nurses' role	**.846**	.042	.089	.198		
17 Mental health nurses should educate female clients about the importance of breast self-examination	**.799**	.080	.084	-.031		
25 Mental health nurses should educate male clients about the importance of testicular self-examination	**.767**	.004	.037	.264		
10 Ensuring clients are registered with a dentist should be part of the mental health nurses' role	**.765**	.100	.015	.108	**5.55**	**23.12**
6 Giving advice on how to prevent heart disease should be part of the mental health nurses' role	**.707**	.309	.143	-.099		
11 Mental health nurses should provide clients with contraceptive advice	**.697**	.211	.019	-.165		
1 Helping clients manage their weight should be part of the mental health nurses' role	**.464**	.521	.199	-.222		
2 Giving nutritional advice to clients should be part of a mental health nurses role	**.443**	.498	.292	-.263		
19 I am confident that I would know if a client was presenting with symptoms of hypoglycaemia	.028	**.769**	.104	-.109		
26 I am confident that I could resuscitate a client who had a cardiac arrest	-.096	**.692**	-.140	.107		
3 I am confident that I would know if someone was presenting with symptoms of hyperglycaemia	.090	**.653**	.222	-.298	**3.04**	**12.67**
21 I am confident that I know which psychotropic drugs increase the risk that a client may experience cardiac problems	.278	**.612**	-.237	.195		
8 I am confident that I can measure a clients' blood-pressure accurately	.165	**.593**	.167	-.193		
9 It is difficult to get clients to follow advice on how to manage their weight	-.016	.037	**.728**	.025		

18 It is difficult to get clients to follow healthy-eating advice	-.055	.190	**.691**	-.156		
15. Clients are not motivated to exercise	.034	.339	**.489**	.030		
5 Clients with serious mental health problems are not interested in improving their physical health	.014	.011	**.470**	-.086	**2.06**	**8.56**
23 My workload prevents me doing any physical health promotion with clients	.166	.261	**.436**	-.062		
28 Staff and clients smoking together helps to build a therapeutic relationship	.011	.302	-.064	**.765**		
16 Clients should be given cigarettes to help achieve therapeutic goals	-.037	.097	.076	**.714**		
12 Clients should not be encouraged to give up smoking, as they have enough to cope with	.322	.079	-.091	**.535**	**1.66**	**6.90**
13 Informing clients about the possible effects of medication may have on their physical health will increase non-adherence	.110	.317	-.009	**.527**		
27 Clients' physical health worries are mostly due to their mental illness	.161	.108	.034	**.454**		
7 It should not be the mental health nurse role to check with a client if they have had cancer screening checks (i.e. cervical smear and mammogram)	.322	.079	-.091	**.368**		

*Four factors explain 51.3% of the variance of the translated PHASe scale

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Factor 1: nurses' attitudes to involvement in physical health care (8 items)
Factor 2: nurses' confidence in delivering physical health care (5 items)
Factor 3: perceived barriers to physical health care delivery (5 items)
Factor 4: attitudes to smoking and negative beliefs (6 items)

Table 3 Scale internal consistency values

Sub-scales	**Cronbach's Alpha**	**Mean±SD**
Nurses' attitudes to involvement in physical health care	.88	3.47±.79
Nurses' confidence in delivering physical health care	.71	4.11±.58
Perceived barriers to physical health care delivery	.64	2.47±.65
Attitudes to smoking and negative beliefs	.74	3.31±.76
Total Scale	.83	3.42±.36

M: mean, SD: standard deviation

Figure 1 Scree Plot for the EFA for the PHASe Administered in Turkey

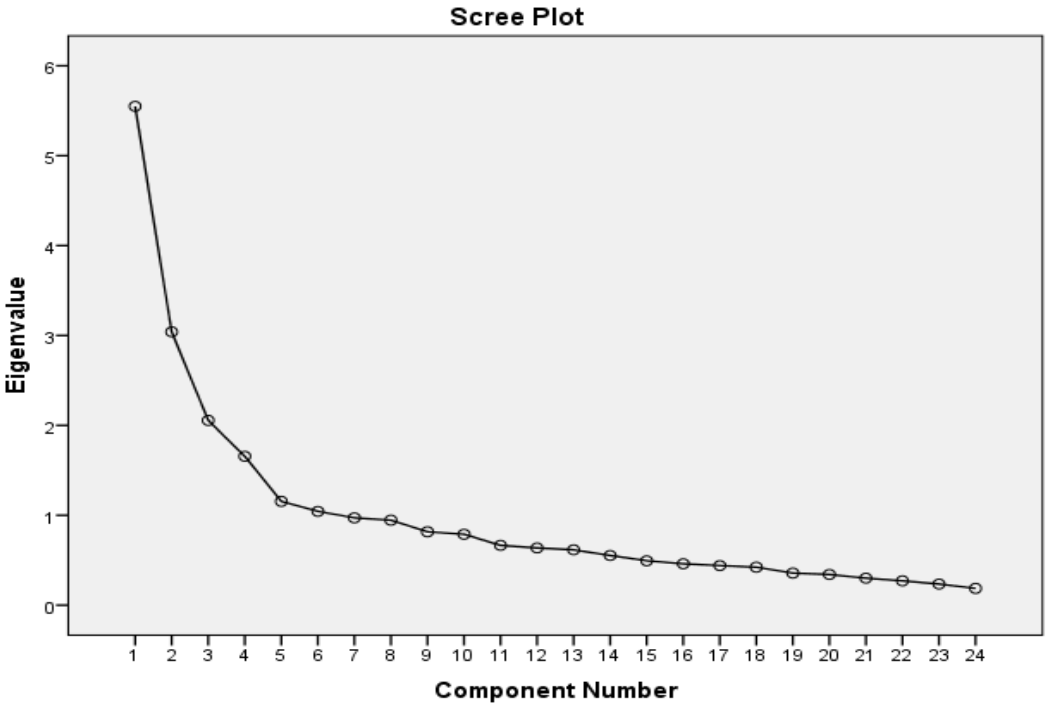

Table 4 Nurses' attitudes and confidence: ratings on PHASe, ordered by extent of agreement

	PHASe sub-scale items	Number in agreement (strongly agree/ agree)			
		n	%	Mean±SD	
	Nurses' attitudes to involvement in physical health care				
2	Giving nutritional advice to clients should be part of a mental health nurses role	145	83.3	3.95	.89
1	Helping clients manage their weight should be part of the mental health nurses' role	129	74.1	3.75	1.09
17	Mental health nurses should educate female clients about the importance of breast self-examination	123	70.7	3.73	1.00
11	Mental health nurses should provide clients with contraceptive advice	121	69.6	3.69	1.12
6	Giving advice on how to prevent heart disease should be part of the mental health nurses' role	104	59.7	3.55	1.07
10	Ensuring clients are registered with a dentist should be part of the mental health nurse's role	75	43.1	3.13	1.17
25	Mental health nurses should educate male clients about the importance of testicular self-examination	71	40.8	3.11	1.12
22	Ensuring clients have their eyes regularly checked by an optician should be part of the mental health nurse's role	51	29.3	2.83	1.10
	Nurses' confidence in delivering physical health care				
8	I am confident that I can measure a client's blood-pressure accurately	166	95.4	4.69	.73
19	I am confident in assessing signs and symptoms of hypoglycaemia	154	88.5	4.30	.76
3	I am confident in assessing signs and symptoms of hyperglycaemia	149	85.7	4.11	.84
26	I am confident that I could resuscitate a client who had a cardiac arrest	140	80.4	4.02	.98
21	I am confident that I know which psychotropic drugs increase the risk that a client may experience cardiac problems	85	48.9	3.41	.96
	Perceived barriers to physical health care delivery				
9	It is difficult to get clients to follow advice on how to manage their weight	135	77.5	3.80	.87
18	It is difficult to get clients to follow healthy-eating advice	127	73.0	3.69	.84
23	My workload prevents me doing any physical health promotion with clients	109	62.6	3.56	1.12
5	Clients with serious mental health problems are not interested in improving their physical health	103	59.2	3.41	1.25
15	Clients are not motivated to exercise	87	50.0	3.17	1.05
	Attitudes to smoking and negative beliefs				
27	Clients' physical health worries are mostly due to their mental illness	68	39.0	3.06	1.00
7	It should not be the mental health nurse role to check with a client if they have had cancer screening checks (i.e. cervical smear /mammogram)	60	34.5	2.78	1.15
13	Informing clients about the possible effects of medication may have on their physical health will increase non-adherence	50	28.7	2.67	1.20
16	Clients should be given cigarettes to help achieve therapeutic goals	45	25.9	2.65	1.10
12	Clients should not be encouraged to give up smoking, as they have enough to cope with	44	25.3	2.56	1.20
28	Staff and clients smoking together helps to build a therapeutic relationship	39	22.4	2.39	1.30

PHASe: Physical Health Attitude Scale, n: frequency, %: percentages, M: mean, SD: standard deviation

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Page no
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1-3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3-6
Objectives	3	State specific objectives, including any prespecified hypotheses	7
Methods			
Study design	4	Present key elements of study design early in the paper	7
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	-
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	*8*
Bias	9	Describe any efforts to address potential sources of bias	9
Study size	10	Explain how the study size was arrived at	10
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	-
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	11
		(*b*) Describe any methods used to examine subgroups and interactions	-
		(*c*) Explain how missing data were addressed	-
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	-
		(*e*) Describe any sensitivity analyses	-
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	11
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential	11

		confounders	
		(b) Indicate number of participants with missing data for each variable of interest	-
Outcome data	15*	Report numbers of outcome events or summary measures	-
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	11-14
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	-
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	-
Discussion			
Key results	18	Summarise key results with reference to study objectives	14-20
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	21
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	21-22
Generalisability	21	Discuss the generalisability (external validity) of the study results	22
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	-

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.