



**UNIVERSITY OF ÉVORA**

**SOCIAL SCIENCE SCHOOL**

DEPARTMENT OF PSYCHOLOGY

**What do we gain when we listen to the patients? Comparison of PSYCHLOPS with two nomothetic measures.**

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**Master in PSYCHOLOGY**

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What do we gain when we listen to the patients? Comparison of PSYCHLOPS with two nomothetic measures.

### **Abstract**

This research aims to explore the clinical usefulness of an individualized outcome measure, the *Psychological Outcome Profiles* (PSYCHLOPS). PSYCHLOPS is self-report measure that invites the patient to build his own outcome questionnaire. Our goal is to understand to what extent the items indicated by the patient add qualitative information, when compared with standardized outcome measures. A total of 107 adult patients in treatment in two sites filled in the PSYCHLOPS and two standardized measures (CORE-OM and PHQ-9). A total of 279 patient-generated items were analysed and categorized in 65 content sub-themes. Results show that “Work – related problems” was the most common sub-theme indicated by patients. Approximately one quarter of sub-themes (26%) were not found in CORE-OM items and 66% (n=43) were not found in PHQ-9 items. Seventy nine (74%) patients reported at least one problem that is not covered in CORE-OM. Almost the entire sample (96.2% of the patients) reported at least one response that did not map to a PHQ-9 item. Throughout this study it was revealed the complexity of the answers given by the patients.

Key-words: individualized measures, outcome assessment, patient involvement.

O que ganhamos ao ouvir os pacientes? Comparação do PSYCHLOPS com duas medidas nomotéticas.

### **Resumo**

Este estudo tem como objetivo explorar a utilidade clínica de uma medida individualizada, o *Psychological Outcome Profiles* (PSYCHLOPS). O PSYCHLOPS é uma medida de auto-relato que convida o paciente a construir o seu próprio questionário. O nosso objetivo é compreender até que ponto os itens indicados pelo paciente acrescentam informação qualitativa, quando comparados com medidas nomotéticas. Um total de 107 pacientes clínicos em dois locais preencheram o PSYCHLOPS e duas medidas standardizadas (CORE-OM e PHQ-9). Um total de 279 itens criados pelos pacientes foram analisados e categorizados em 65 subtemas. Os resultados indicam que “Problemas relacionados com o trabalho” foi o subtema mais comum descrito pelos pacientes. Aproximadamente  $\frac{1}{4}$  dos subtemas (26%) não estão representados nos itens do CORE-OM e 66% (n=43) não estão representados nos itens do PHQ-9. Setenta e nove pacientes (74%) relatam pelo menos uma resposta não representada nos itens do CORE-OM. Praticamente toda a amostra (96.2% dos pacientes) relata pelo menos uma resposta não representada nos itens do PHQ-9. Ao longo deste estudo foi demonstrada a complexidade das respostas dadas pelos pacientes.

Palavras-chave: Medidas individualizadas, avaliação de resultado, envolvimento do paciente.

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## 1. Introduction

Psychological assessment is important in clinical settings, not only allows understanding the concerns and behaviors of patients as well as evaluating the effectiveness of psychological treatments (Haynes, Richard & Kubany, 1995; Holmes, 1995; Maloney & Ward, 1976). For many years, the psychological assessment has been following a nomothetic approach, but recently several studies came forward with a new approach – the individualized approach (Ashworth et al., 2004; Elliot et al., submitted; Fitzpatrick, Gavey, Buxton, & Jones, 1998). In this line of research it has been proposed several individualized measures or patient-generated outcome measures - measures in which the patient is allowed to select issues, domains that are of personal concern, about what they find relevant to be addressed while in treatment and that are not predetermined by a list of questionnaire items (Ashworth et al., 2004). However, being a recent research line, there is a call for evidences about the psychometric properties of the individualized outcome tools.

Our study aims to compare two measures (nomothetic and individualized), and understand the extent to which individualized outcome measures add qualitative information, when compared with nomothetic measures. That is, when we ask the patient what are his/her problems, will he/she indicate items that are not covered on nomothetic measures?

To address this question we planed a thematic analysis of responses elicited by the patient generated outcome measure (PGOM), and identify whether the subthemes featuring on this PGOM also featured on the nomothetic measures used in the analysis.



## 2. Theoretical Background

### 2.1. Outcome assessment of psychological treatments: Nomothetic and idiographic approaches

In mental health care, psychological assessment is important to measure clinical changes, or treatment outcome (McReynolds, 1975; Nordal, 2012). Although psychologists are well aware of the benefits of psychotherapy, it is not always easy to demonstrate these benefits to other health professionals and even to patients. As such, with outcome assessment, the impact of psychological treatments may be shared in the health system, contributing to increased quality care (Nordal, 2012; Sales & Alves, 2012; Weiner, 1983).

Psychological outcome assessment typically follows a nomothetic approach, which consists on standardized scales composed by pre-set psychometrically derived items ("nomothetic" measures). Nomothetic measures, by using the same questions for everyone, presume that their scores represent a dimension of variation on which everyone has a score, like height or weight. These measures are more used in mental health assessment because they are more accepted in the scientific community, more enable to predict and control behavior and of course, they are more precise, objective and allow case comparison (Ashworth, et al., 2007).

However, nomothetic measures, by being designed to the whole population, may contain items of little personal significance and focal problems may not be covered. In other words, such scales, may include a limited number of items that are relevant to the specific concerns of the patient, thus resulting in a less sensitivity to change and the increased probability of underreporting more individual-specific problems (Ashworth, Evans, & Clement, 2008; Ashworth et al., 2007; Hédinsson, Kristjánisdóttir, Ólason, & Sigurosson, 2013).

That said, how can we make room for the uniqueness of each patient clinical condition, if we only use nomothetic instruments with pre-set items? Since the clinical condition of each patient is unique and that psychological distress is always diverse and multifaceted, it may be appropriate to use a more individualized approach to measure therapy outcome (Ashworth et al., 2008; Ashworth et al., 2004; Ashworth et al., 2005a; Brooks & Davies, 2008; Donnelly & Carswell, 2002; Hansson, Berglund, & Ohman, 1987; Sales & Alves, 2012; Sales, Gonçalves, Fragoeiro, Noronha, & Elliott, 2007).

According to Elliott et al., (in press), the American psychologist Gordon Allport (1937, 1960) was the first to speak of individualized strategies in the field of

psychology, arguing that this area was essential to consider the particularity of each individual, and not the universal assumptions about human beings. Later on, other authors, considered individual behavior as a criterion of psychiatric patients' assessment (Pascal & Zax, 1956) and demonstrated the importance of considering the differences among patients, therapists and treatments (Kiesler, 1966).

Ashworth and colleagues (2004) defined these individualized measures as "patient-generated outcome measures – questionnaires where the items to be measured are defined by the patient" (Ashworth et al., 2004, p. 28). Individualized measures or more recently called patient-generated outcome measures (PGOMs, Sales & Alves, submitted) are instruments in which the patient is allowed to select issues, domains that are of personal concern, about what they find relevant to be addressed while in treatment and that are not predetermined by a list of questionnaire items. The patient is encouraged to identify those aspects of life that are personally affected by health (sensations, perceptions, thoughts and feelings) (Ashworth et al., 2008; Fitzpatrick et al., 1998; Sales & Alves, 2012; Ruta & Garratt, 1994). It is believed that PGOMs provide an appropriate method for addressing the concerns of patients and at the same time, increased attention is given to patients' preferences and wishes in relation to their health care (Fitzpatrick, et al., 1998). It also can contribute to good clinical practice, since it involves the patient, giving him the opportunity to express in their own words what really worries him (Sales & Alves, submitted).

In addition, some authors hypothesized that the interview process required in the building of some PGOMs allows the establishment of a relationship between interviewer-interviewee that somehow may influence the motivation of the patient to the assessment and therapeutic process (Ashworth, et al., 2007; Fitzpatrick et al., 1998; Robinson, Ashworth, Shepherd, & Evans, 2007; Turner-Stokes, 2011; Wagner & Elliott, 2001).

As indicated in the literature, PGOMs are not widely used in mental health care (such as the nomothetic measures). However many psychotherapists with the standpoint of clinical practice claim that the daily use of PGOMs is beneficial to prepare the first session, to elaborate discussions on post-session and for clinical decisions concerning treatment (Sales et al., 2007). Because of the advantages of routine use of PGOMs, there is a movement of practitioners joining practice-based research networks towards the development of personalized assessment methods. For example, the international practice-based research network for personalising health assessment (referred to as the IPHA Group) (Sales, et al., 2014), developed a computer-based

tracking system, the IPPS (Individualized Patient Progress System). This system is a combination of patient-generated measures and a nomothetic measure (CORE – Net, Clinical Outcomes Routine Evaluation – Net) (Mellor-Clark, 2007).

The major problem for PGOMs is that these instruments show little feasibility when compared to nomothetic measures – their personal thematic content makes the meaning of scores and population norms uncertain and consumes much time in the application (Ashworth et al. 2007; Fitzpatrick et al., 1998). Another disadvantage is that they have been criticized for low precision and the lack of empirical evidence of their validity (Elliott et al., submitted). In this sense, they may have strong claim for validity in terms of the content of items addressed by the instrument (Ashworth et al., 2008; Fitzpatrick et al., 1998). Despite these disadvantages, the use of individualized measures has increasingly been implemented covering several contexts (Sales & Alves, submitted). Table 1 provides a brief description of the differences between nomothetic and individualized measures.

*Table 1. Summary of the differences between nomothetic and individualized measures*

	<b>Nomothetic measures</b>	<b>Individualized measures or PGOM</b>
Definition	Standardized scales composed by pre-set psychometrically derived items (Ashworth et al., 2007).	Questionnaires and related instruments that ask patients about their condition; items to be measured are defined by the patient (Ashworth et al., 2004; Fitzpatrick et al., 1998; Sales & Alves, submitted).
Statistical methodology used	Quantitative method (Evans, Margison, & Barkham, 1998).	Quantitative and qualitative methods (Ashworth et al., 2007).
Advantages	More scientific; more enables to predict and control behavior; more	The patient is allowed to select issues or domains that are of personal

<p>precise, objective and controlled methods. The items are derived from highly problems and symptoms reported by the clinical population to the general population; also allows replication (Ashworth et al., 2007; Evans et al., 1998).</p>	<p>concern, about what they find relevant concerning treatment; (Ashworth et al., 2008; Fitzpatrick et al., 1998; Sales &amp; Alves, 2012; Ruta &amp; Garratt, 1994). The use of PGOM can contribute to good clinical practice, since it involves the patient giving him the opportunity to express in their own words what really worries him (Sales &amp; Alves, submitted).</p>
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Disadvantages

<p>Less sensitivity to change (Hédinsson et al., 2013); fewer items related to personal concerns (Clark, Hook, &amp; Stein, 1997); less representative of the clinical condition (Ashworth et al., 2007).</p>	<p>Low precision; lack of empirical evidence of their validity; norms uncertain, long application time and complexity (Ashworth et al. 2007; Elliott et al., submitted; Fitzpatrick et al., 1998).</p>
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A number of studies have shown that patients frequently indicate issues of concern on PGOM that are not identified in nomothetic measures (Hunter et al., 2004; Wagner & Elliott cit in Sales & Alves, 2012). For example, comparing the PGOM Simplified Personal Questionnaire (PQ) with two nomothetic measures, Symptom Checklist – 90 – Revised (90 items) and the Inventory of Interpersonal Problems (26 items), Wagner & Elliott (cit in Sales & Alves, 2012) found that 57% of the items on the PQ were totally new and unique, not appearing on the other two nomothetic measures. In another study by Ashworth and colleagues (2007), comparing PSYCHLOPS (a PGOM) with CORE – OM (a nomothetic measure) concluded that PSYCHLOPS highlights the main

concerns of patients and many of these concerns did not appear on the nomothetic measure CORE-OM.

A recent literature review (Sales & Alves, submitted) identified 3 PGOMs: Simplified Personal Questionnaire (PQ); Psychological Outcome Profiles (PSYCHLOPS) and Goal Attainment Scaling (GAS). In our study we will focus on PSYCHLOPS, as it is a brief one-page self-report tool that can potentially be applied in a variety of clinical settings.

## **2.2. A Patient Generated Outcome Measure – PSYCHLOPS (Psychological Outcome Profile)**

### **2.2.1. Development of PSYCHLOPS**

The development of PSYCHLOPS started in 1999, with several primary care therapists who sought an instrument that could capture various aspects of recovery that did not appear in conventional instruments. PSYCHLOPS is based on the desirable features of MYMOP (Measure Your own Medical Outcome Profile) (Paterson cit in Ashworth et al., 2004). MYMOP measured the aspects and effects of physical illness that the patient decided were most important. The validity of MYMOP was confirmed by comparison with the SF-36 scale, and it has been proved to be more sensitive to change over time than the SF-36 (Ashworth et al., 2004; Garratt, Ruta, Abdalla, & Russell, 1994; Paterson cit in Ashworth et al., 2004). Because of its desirable features, MYMOP was used as the basis for developing a patient-generated instrument suitable for patients seeking help for psychological problems – PSYCHLOPS (Ashworth et al., 2004; Hédinsson, et al., 2013).

The Psychological Outcome Profile – PSYCHLOPS – was developed with the intention of being the first, self-administered individualized measure, with ease use (Ashworth, Kordowicz, & Schofield, 2012). PSYCHLOPS appeared in 2004 as a pre-therapy and post-therapy mental health outcome instrument. After several validation studies (Ashworth et al., 2005a; Ashworth et al., 2005b; Ashworth, et al., 2008; Davy, Quinn, Togher, Wilson, & Siriwardena, 2012; Evans, Ashworth & Peters, 2010), and some changes, a new during-therapy version was introduced (Ashworth et al., 2012). The version used in this study is the pre-therapy version. Noted that PSYCHLOPS is not intended for use as a diagnostic instrument and can therefore be used with patients experiencing a wide variety of mental health problems.

PSYCHLOPS includes four questions. The first question asks: “Choose the problems that troubles you most. Please write it in the box below”. Further questions ask for a description of one other problem and what those problems make it difficult for

the client to do. (Question 2: “Choose another problem that troubles you”; Question 3: “Choose one thing that is hard to do because of your problem (or problems)”). PSYCHLOPS therefore elicits three freetext responses covering two domains: Problem and Function. Each is scored by the patient on an ordinal 6-point scale (ranging from a score of zero to five). These underlying three domains (*Problems* – 2 questions; *Function* – 1 question; *Wellbeing* – 1 question) are derived from a theoretical model which describes an empirical sequence of causality – psychological problems trigger deficits in functional capacity which triggers diminished wellbeing. In parallel with its applicability to a broad range of mental health problems, the measure is applicable in talking therapies and can be used before, during and after any type of psychological intervention (Ashworth et al., 2004; Ashworth et al., 2012).

PSYCHLOPS has recently been translated into Portuguese language by the IPHA group in Évora (International network for Personalizing Health Assessment, Sales et al., 2014).



### **2.2.2. Properties of PSYCHLOPS**

Fitzpatrick and colleagues (1998) showed that in addition to the psychometric characteristics, there are other criteria that must be taken into account when describing and selecting an outcome measure: appropriateness, reliability, validity, responsiveness, precision, interpretability, feasibility and acceptability. We therefore use these criteria to compile the available evidences concerning PSYCHLOPS.

#### **Appropriateness**

Appropriateness concerns about the content of the instrument and if that is appropriate to the particular application (e.g., which health dimensions are important, the patient's characteristics and the content of the instrument) (Fitzpatrick, et al., 1998; Guyatt, Feeny, & Patrick, 1991). It is difficult to specify about what is an appropriate instrument for a given application. Ultimately, this question may depend on the patients' specific issues and the content of the instrument. For this reason, the PSYCHLOPS, as all PGOM, presents high appropriateness because its content is defined by the patient.

The choice in using PSYCHLOPS should take into account the characteristics of their application. It was created for use in mental health services and is a self-administered and self-completed, one-page instrument, consisting in four questions. It briefly fills and wants to give emphasis to the perspective that the patient has of his own problems. To fill the PSYCHLOPS it is not necessary the presence of a professional, unless the patient has difficulty in reading / writing (Ashworth et al., 2004).

#### **Reliability**

Reliability concerns about the reproducibility of an instrument, which assesses whether it gets the same results in repeated applications when respondents have not changed in relation to the areas measured. This is assessed by test-retest reliability (correlation coefficient). Also concerns about if the instrument is internally consistent, i.e., whether the items are homogeneous and measure the same concept, usually assessed using Cronbach's alpha (Cronbach, 1951; Fitzpatrick et al., 1998).

Regarding PSYCHLOPS, three studies have so far reported results for reliability. A study from Ashworth and colleagues (2005b) have reported an internal reliability of  $\alpha=0.79$  for the pre-therapy version. Another study from Ashworth and colleagues (2008) reported an internal reliability of  $\alpha=0.75$  for the pre-therapy version, and finally a study from Czachowski, Seed, Schofield, & Ashworth (2011) shows an internal reliability of  $\alpha=0.81$  also for the pre-therapy version. Concerning the test-retest reliability, Evans and colleagues (2010) conducted a study which showed an intraclass

correlation coefficient of  $r=0.70$ . With these results, shown by several studies, the PSYCHLOPS proves to be an instrument internally consistent and reproducible.

### **Validity**

An instrument is valid when it actually measures what it is intended. This criterion should not be seen as a fixed property, and can be assessed qualitatively and quantitatively. It is possible to classify two types of qualitative assessment: content and face validity. These two types assess whether items are suitable for its proposed application. Instrument content should be examined for relevance to the application and for adequate coverage of the domain of interest (Fitzpatrick et al., 1998; Ware, 1987). Note that validity testing should also involve quantitative assessment, such as criterion validity or construct validation. Criterion validity is assessed when an instrument correlates with another instrument/measure that is regarded as a more accurate. In the absence of a criterion variable, it is used construct validity which takes into account the relationship of the instrument constructs with sets of variables. The factor analysis provides empirical support for the validity of an instrument, and is used to identify various health domains separated into an instrument (Fitzpatrick et al., 1998; Maroco, 2003).

PSYCHLOPS validity was assessed in two studies: in comparison with a nomothetic measure CORE-OM (Clinical Outcomes in Routine Evaluation – Outcome measure), PSYCHLOPS pre-therapy version revealed Spearman's rank correlation coefficient or Spearman's  $\rho$  of 0.61, (Ashworth et al., 2005b); and comparing with HADS (Hospital Anxiety Depression Scale) PSYCHLOPS pre-therapy showed a  $\rho$  of 0.47 (Ashworth et al., 2008).

### **Responsiveness**

Responsiveness also known as sensitivity to change is the ability of an instrument to detect clinically important changes in the patient against the therapeutic process.

This criterion is usually assessed, in a longitudinal study, by examining changes in instrument scores for groups of patients whose health is known to have changed over time. Another way to evaluate responsiveness is through the effect size statistic or comparison of the instrument with another instrument already considered effective (Fitzpatrick et al., 1998; Guyatt, Deyo, Charlson, Levine, & Mitchell, 1989; Kazis, Aderson, & Meenan, 1989; Kirshner & Guyatt, 1985).

Regarding PSYCHLOPS sensitivity to change has been measured using the effect size. A number of studies have found effect sizes of 1.53 (Ashworth et al., 2005b) and 1.61 (Ashworth et al., 2008). Note that effect sizes  $>0.80$  are generally considered

large for health service related outcomes, so it can be said that PSYCHLOPS appears to be sensitive to client change.

### **Precision**

Precision concerns about how accurate/precise are the scores of the instrument. The precision of an instrument is mainly influenced by the format of responses categories, i.e. the form in which respondents are able to give their answers. Some response presentations are the scales using the binary 'yes' or 'no' but it does not allow respondents to report degrees of difficulty or severity, for example. The majority of instruments use Likert type scales such as: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree, allowing the respondents to report various degrees (Allen & Seaman, 2007; Fitzpatrick et al., 1998).

Being a PGOM, the responses to PSYCHLOPS are proposed by the patient, and the range score of these responses varies between zero to five (0 = Not at all affected; 5 = Severely affected). These characteristics allow the instruments to be very detailed and representative of the clinical condition of each patient.

### **Interpretability**

Interpretability concerns with how significant are the results of an instrument, in other words, aims to investigate how interpretable are the scores of the instrument (Fitzpatrick et al., 1998).

Despite the PSYCHLOPS cover quantitative response questions (*e.g.: How much has it affected you over the last week?*), the interpretation of results is made more qualitatively. The analysis of the instruments focuses on the problems revealed by the patients on the free-text boxes and the changes experienced over time, whether in the form of scores change or problems change.

### **Feasibility**

Feasibility concerns if an instrument is easy to administer and process. The instruments that are difficult to administer may jeopardize the investigation and the patient's motivation to respond. An obvious example is the additional resources required for interviewer administration over self-administration. In addition, when interviewer administration is used, training of the team/staff before undertaking interviewer administration is required.

These variances in the administration method have influence on the quality and accuracy of data. Each administration varies in the cognitive demands required for each patient. The less demanding method is interviewer administration (*e.g. PQ*), and it

is only necessary that the patient can speak and understand the same language as the interviewer, and also the interviewer can help the patient to explore their concerns. The fact that PSYCHLOPS is short and self-administrated may save time and enhance adherence to this instrument, both by patients and their own therapists. However, self-administration methods (such as PSYCHLOPS) involving visual and writing skills tend to be more demanding. Furthermore, despite it doesn't require an interviewer; PSYCHLOPS might require the presence of a person to help patients who have difficulty with reading/writing (Bowling, Bond, Jenkinson, & Lamping, 1999 & Bowling, 2005; Fitzpatrick, et al., 1998).

### **Acceptability**

It is essential that an instrument is well accepted by patients and the acceptability is concerned with exactly that. There are several indicators of acceptability, such as: administration time (the longer it takes the application, the more the patient loses motivation to respond), response rates, and levels of missing data (for example, if the patient does not respond to an instrument or just certain items can be an indicator that the instrument can be difficult to understand, cause discomfort or not make sense for the patient). There are also a number of factors that can influence acceptability such as the method of administration, questionnaire design, and the health status of respondents (Cox, et al., 1992; Fitzpatrick, et al., 1998).

In a study conducted by Hédinsson and colleagues (2013), the acceptability of PSYCHLOPS was demonstrated by the high completion response rate. Also a qualitative study by Ashworth and colleagues (2005a) showed that, for therapists, PSYCHLOPS was perceived as an addition to the data already provided by other quantitative tools, with special emphasis on qualitative information that contributed to the therapist-patient interaction.

### **3. Research proposal - justification and objectives**

In the theoretical background we saw that idiographic outcome assessment is expanding, so it is important to develop PGOMs incorporating items proposed by patients on their own assessment process. As a PGOM, the PSYCHLOPS gathers some evidence of psychometric properties and clinical utility that potentially make it recommended for routine outcome assessment. However, what do we gain when we use these measures? Do patients really add some different and relevant information on PSYCHLOPS when compared with nomothetic measures?

To our knowledge, only one study explores these questions. Ashworth and colleagues (2007), in a study comparing PSYCHLOPS with CORE-OM claimed that 60% of patients reported at least one response in PSYCHLOPS that did not clearly map to a CORE-OM item.

Our study is an extension of this research carried out by Ashworth and colleagues (2007) in collaboration with the lead author, Dr. Mark Ashworth (King's College London). For this study we redefined the method of qualitative analysis used initially by Ashworth and colleagues (2007) and compared the PSYCHLOPS contents with the CORE-OM (as before) and also with the PHQ-9. That said we planned a thematic analysis of responses elicited by PSYCHLOPS, and identify whether subthemes featuring on this PGOM also featured on the nomothetic measures used in the analysis.



## 4. Method

### 4.1. Participants

Two distinct samples were included in this study, corresponding to two distinct clinical populations: Psychiatric patients and Alcohol and Drug misusers. Our goal was to get a larger total sample, as well as more generalized results. Samples were derived from two projects of the IPHA group network (Sales, et al., 2014), namely the *Personalized outcome measurement in Hospital-based psychological treatments* approved by Hospital Espírito Santo de Évora ethics committee (Sample 1, n= 55) and *Patient involvement in psychological therapies for substance misuse: towards a personalised outcome measurement* under the PhD of Paula Alves (Alves, Sales, & Ashworth, 2013) financed by FCT (Foundation for Science and Technology) (SFRH/BD/87308/2012) (Sample 2, n= 52).

#### Sample 1

A total of 57 adult patients (>18 years) admitted for treatment at the Mental Health and Psychiatry Department, Hospital Espírito Santo de Évora, a general public hospital serving several districts of Alentejo, in the south of Portugal. Two were eliminated because their data collection was incomplete. The final sample of 55 out-patients, who agreed to participate in this study, was recruited between October 2013 and May 2014. In this sample, 13 patients (23.6%) were male and 42 patients (76.4%) were female, aged between 18 and 85 years ( $M = 42.62$ ,  $SD = 15.38$ ), residents in the district of Évora and Beja. The educational level varies between no literacy and higher education, the most frequent of which is between 7<sup>th</sup> to 9<sup>th</sup> years of education ( $n=15$ , 27.3%). With regard to employability, 43.6% are employed full-time. Regarding family characteristics, almost half of the participants ( $n=24$ , 43.6%) were married, and approximately one third ( $n=16$ , 30.8%) has got two children. Concerning their clinical condition, 56.4% ( $n= 31$ ) had prior psychological or psychiatric support and 72.7% ( $n= 40$ ) were currently taking medication to help their well-being. At least, 65.5% ( $n=36$ ) of patients have unknown diagnosis because data were collected in a pre-treatment evaluation session, before diagnosis evaluation. Socio-demographic variables are displayed in Table 2.

A team of 8 research assistants collected the data. The team consisted of six females' master's degree students in Clinical and Health Psychology, University of Évora, and two psychologists' professional interns, Hospital Espírito Santo, Évora.

Table 2. *Sociodemographic variables in Sample 1 - Hospital Espírito Santo*

Variable	M	SD	n	%
Age	42.62	15.38	55	
Gender				
Male			13	23.6%
Female			42	76.4%
Education level				
Illiterate			1	1.8%
Up to 4 <sup>th</sup> year of education			9	16.4%
5 <sup>th</sup> to 6 <sup>th</sup> year of education			10	18.2%
7 <sup>th</sup> to 9 <sup>th</sup> year of education			15	27.3%
10 <sup>th</sup> to 12 <sup>th</sup> year of education			12	21.8%
University attendance			5	9.1%
BSc/Msc/PhD			3	5.5%
Residence				
Évora			54	98.2%
Beja			1	1.8%
Marital Status				
Married			24	43.6%
Divorced			8	14.5%
Single			16	29.1%
Life partners			5	9.1%
Widowed			2	3.6%
Employability				
Students			4	7.3%
Student worker			2	3.6%
Student worker seeking employment			1	1.8%
Employed full-time			24	43.6%
Employed part-time			2	3.6%
Unemployed			11	20%



Variable	M	SD	n	%
Retired			11	20%
Household members				
1			8	15.4%
2			16	30.8%
3			14	26.9%
4			11	21.2%
5			2	3.8%
6			1	1.9%
Number of children				
0			16	29.6%
1			12	22.2%
2			20	37%
3			5	9.3%
4			1	1.9%
Prior Psychological/Psychiatric Support				
No			24	43.6%
Yes			31	56.4%
Medication				
No			15	27.3%
Yes			40	72.7%
Diagnosis				
Depression/Anxiety			18	32.7%
Substance misuse			1	1.8%
Unknown			36	65.5%



## Sample 2

A total of 52 adult patients (>18 years) admitted for treatment in three institutions for drug misuse treatment was recruited between April 2013 and April 2014. In this sample, 30 patients (68.2%) were male and 14 patients (31.8%) were female, aged between 20 and 69 years (M = 40.02, SD = 11.70), residents in the district of Évora, Lisboa and Guarda. The education level varied between four years of education and higher education, although the most frequent level was between 7<sup>th</sup> to 9<sup>th</sup> years of education (n=13, 31%). With regard to employability, 60.5% are unemployed. Regarding family variables, of 22 (50%) patients are single and 38.6% have no children (see Table 3).

Data were collected in three sites (see distribution in table 3) by a research team that consisted in four master's degree students (three in University of Évora and one in Faculty of Psychology - University of Lisbon), one PhD student (ISCTE - University Institute of Lisbon) and one therapist (Therapeutic Community in Esposende).

*Table 3. Sociodemographic variables in Study Sample 2 – Alcohol and Drug Misuse*

Variable	M	SD	n	%
Age	40.02	11.70	44	
Data collection site				
Taipas Center (Lisbon)			13	25%
Center for Integrated Responses (Évora)			10	19.2%
Alcoholology Unit (Lisbon)			29	55.8%
Gender				
Male			30	68.2%
Female			14	31.8%
Education level				
Up to 4 <sup>th</sup> year of education			9	21.4%
5 <sup>th</sup> to 6 <sup>th</sup> year of education			8	19%
7 <sup>th</sup> to 9 <sup>th</sup> year of education			13	31%
10 <sup>th</sup> to 12 <sup>th</sup> year of education			7	16.7%
University attendance			4	9.5%
BSc/Msc/PhD			1	2.4%

Variable	M	SD	n	%
<b>Residence</b>				
Évora			11	26.2%
Lisboa			30	71.4%
Guarda			1	2.4%
<b>Marital Status</b>				
Married			12	27.3%
Divorced			9	20.5%
Single			22	50%
Widowed			1	2.3%
<b>Employability</b>				
Students			1	2.3%
Employed full-time			11	25.6%
Employed part-time			2	4.7%
Unemployed			26	60.5%
Retired			3	7%
<b>Household members</b>				
1			11	25%
2			13	29.5%
3			11	25%
4			3	6.8%
5			5	11.4%
7			1	2.3%
<b>Number of children</b>				
0			17	38.6%
1			13	29.5%
2			10	22.7%
3			2	4.5%
4			2	4.5%

Variable	M	SD	n	%
First addiction treatment				
No			14	33.3%
Yes			28	66.7%

#### 4.2. Instruments

**Psychological Outcome Profiles** (PSYCHLOPS, Ashworth et al., 2004) is a short self-reported, one-page, patient-generated outcome measure developed for use in mental-health services. To develop this instrument was adopted simple and attractive design features, with colored banding used to highlight each question and different colors to distinguish each version, to make the instrument, not only patient centered but also patient friendly (Ashworth et al., 2004; Ashworth et al., 2012).

The instrument consists of four questions. The first question asks: “Choose the problems that troubles you most. Please write it in the box below”. Further questions ask for a description of one other problem (Question 2: “Choose another problem that troubles you” and what those problems make it difficult for the client to do; Question 3: “Choose one thing that is hard to do because of your problem (or problems)”). PSYCHLOPS therefore elicits three freetext responses covering two domains: Problem and Function. Each is scored by the client on an ordinal 6-point scale, ranging from a score of zero to five (Ashworth et al., 2004; Ashworth et al., 2012).

Its psychometric properties were evaluated in earlier studies, and appear to be more sensitive to detect clinical change when compared with standardized scales (Ashworth et al., 2008; Ashworth et al., 2005b; Hédinsson, et al., 2013). Three major studies have reported an internal reliability of 0.79 pre-therapy and 0.87 post-therapy (Ashworth et al., 2005b); 0.75 pre-therapy and 0.83 post-therapy (Ashworth et al., 2008); and 0.81 pre-therapy, 0.85 during therapy and 0.88 post-therapy (Czachowski et al., 2011). Convergent validity has been showed comparing PSYCHLOPS with CORE – OM (Evans et al., 2000). PSYCHLOPS (pre – therapy and post – therapy) revealed a Spearman's rank correlation coefficient of 0.61, (Ashworth et al., 2005b); and comparing with HADS (Zigmond & Snaith, 1983) PSYCHLOPS pre-therapy showed a *rho* of 0.47 and 0.63 post-therapy (Ashworth et al., 2008). PSYCHLOPS has recently been translated into Portuguese by the IPHA group in Évora (International network for Personalizing Health Assessment).

Currently there are several versions of PSYCHLOPS, however for this study it's only used the pre-treatment version.

**Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM;** Evans et al., 2000), the CORE-OM is a 34 item self-report instrument that measures psychological well-being of adults with a sufficient degree of literacy for understanding the content of the items and, if possible, auto full fill (Barkham et al., 2001; Leach et al., 2006).

The CORE-OM items are grouped in 4 dimensions: a) Well-being (four items); b) Social functioning (twelve items); c) Problems/symptoms (twelve items); d) Risk (six items). Each item is rated on a 5 points Likert-scale ranging from 0=not at all to 4=most or all the time, referring the patient to experience the last week (Evans et al., 2000; Sales et al., 2012). This instrument is usually applied as a tool for pre-therapy evaluation or as a measure of psychological change during the intervention and/or at the end. Note that this instrument is not a diagnostic tool for specific disorders (i.e., depression) (Evans, 2012). – CORE-OM has been translated into Portuguese by Sales and colleagues (2012). A preliminary study about the psychometric proprieties of the Portuguese version of CORE-OM indicates a good internal reliability ( $\alpha > 0,8$ ) demonstrating that the Portuguese version of the CORE-OM is a valid and adequate instrument to evaluate psychological changes, both in research and clinical practice contexts (Sales, et al., 2011).

**Patient Health Questionnaire – 9 items (PHQ-9;** Kroenke, & Spitzer, 2002) – The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression according DSM-IV-R criteria (APA, 2000).

As a severity measure, the PHQ-9 score ranges from 0 to 27, because each of the 9 items can be scored from 0 (“not at all”) to 3 (“nearly every day”). A total score between 1 to 4 reveals None Depression Severity, a total score between 5 to 9 reveals a Mild Depression Severity, a total score between 10 to 14 reveals a Moderate Depression Severity, a total score between 15 to 19 reveals a Moderately Severe Depression and a total score between 20 and 27 indicates a Severe Depression. This instrument have also a follow up, non-scored question that screens and assigns weight to the degree to which depressive problems have affected the patient’s level of function (from “Not difficult at all” to “Extremely difficult”) (Baader, et al., 2012; Kroenke & Spitzer, 2002; Kroenke, Spitzer, & Williams, 2001; Spitzer, et al., 1999). PHQ-9 has been translated into Portuguese by Monteiro, et al., 2013. A preliminary study about the psychometric proprieties of the Portuguese version of PHQ-9 involved a process involved back-translation, cross-cultural adaptation, field testing of the pre-final version, as well as

final adjustments. A sample of university students completed the PHQ-9, the Hospital Anxiety and Depression Scale (HADS, Zigmond, & Snaith, 1983) and the Beck Depression Inventory (BDI, Beck et. al., 1961). The Portuguese version of the PHQ-9 had satisfactory internal consistency (Cronbach's alpha = 0.86) and showed moderate convergent validity with the HADS anxiety ( $r = 0.61$ ;  $p < 0.01$ ) and HADS depression ( $r = 0.59$ ;  $p < 0.01$ ), and strong convergent validity with the BDI ( $r = 0.85$ ;  $p < 0.01$ ) (Monteiro, et al., 2013).

**Socio-demographic form:** A socio-demographic questionnaire intended to collect information on gender, age, education, province of residence, marital status, number of household members, number of children, and current employment status. In addition also aims to ascertain whether the subject had previously psychological or psychiatric support (in the last 5 years), if the subject is currently having psychological or psychiatric support (in case of sample 1) or ascertain whether is the first addiction treatment that the patient is receiving (in case of sample 2), taking medications to help the subjects' well-being and ultimately the diagnosis (if known).

### 4.3. Procedure

#### 4.3.1. Data collection procedure

The data collection procedure was similar in both samples. Patients were notified by letter to arrive to the hospital/institution one hour prior to their appointment with the psychologist, for a pre-treatment evaluation session. Approximately two or three days prior to this appointment, patients were contacted via telephone to confirm the date / hour of their appointment. Upon their arrival for their first session, all new patients fulfilling the inclusion criteria (be over 18 years of age and be admitted for treatment at the referred institutions) were invited to participate and filled in the informed consent. The research protocol was administered using random order of the instruments, except for a group of patients in sample 1 ( $n = 16$ ). In this case the randomization was divided into two blocks. In the first block were presented the PGOM (PQ and the PSYCHLOPS) in random order and in the second block, the nomothetic instruments (CORE-OM and PHQ-9), also in random order. PSYCHLOPS was self-completed by patients; however in some cases the patient had the researcher's help (i.e. lack of glasses or illiteracy). The sociodemographic form was presented at the end. After completing this first step, patients proceed to their clinical consultation with their therapist, as usual.





### **4.3.2. Data analysis procedure**

Concerning PSYCHLOPS, this study used only the three freetext responses: (a) Choose the problem that troubles you most; (b) Choose another problem that troubles you; and (c) Choose one thing that is hard to do because of your problem. The data analysis procedure followed four major steps.

#### **(1) Quality of the freetext items**

As the items are written by the patient it is important to evaluate its quality. We used the Item Rating System proposed by Elliott (2012), which classifies the quality of each free-text item according to the following criteria:

1. Well-formed: Specific, personal difficulty that is reasonably a focus for psychotherapy;
2. Vague personal difficulties (e.g., relationships);
3. Goal (e.g., get along better with people);
4. General societal problems (e.g., general economic situation);
5. Other item quality issues (please describe).

If a response did not clearly fit into the first four criteria (Well-formed, Vague personal difficulties, Goal and General societal problems) a new criteria was created and described as indicated in criteria 5 (Other item quality issues – please describe).

Two independent judges (Master's degree students in Clinical Psychology at the University of Évora) classified each freetext into the category that fits the item best. Discrepancies were discussed in order to reach agreement. Whenever agreement was not possible to reach, a third judge (also Master degree student) was consulted.

#### **(2) Freetext coding**

To facilitate the contrast of the content of the problems indicated by the patient in PSYCHLOPS with the content of pre-defined items on the CORE-OM and the PHQ-9, it was decided to encode the freetext, according to their implicit theme. In order to facilitate comparison of results, we used the thematic classification system that was originally proposed by Robinson and colleagues (2006), and later used in the study by Ashworth et al. (2007). This system codes the freetexts in 61 alternative sub-themes. It was chosen this 61 sub-themes classification system because it seemed to be descriptive and allowing a greater approximation to the problems described by the patients.

If a response did not clearly fit into an existing sub-theme, a new sub-theme was created. Validity was ensured by three independent judges (Master's degree students in Clinical Psychology at the University of Évora) coding each freetext of PSYCHLOPS independently, and when no one came to an agreement, it followed by triangulation with the study supervisor.

Despite respondents were asked to list 1 problem per question, some listed more than one, in which case only the first problem mentioned was analyzed (Ashworth et al., 2007).

### **(3) Matching**

Finally, the sub-themes derived from PSYCHLOPS responses were compared with the content of CORE-OM and PHQ-9. For each sub-theme, two independent judges determined if the sub-theme did or did not map directly to items included in CORE-OM and PHQ-9, classifying the matching into one of the categories: "Definite yes", "Possible yes", "Possible no" and "No".

1. "Definite yes" – When there is a direct and clear matching on the content of the items (e. g., subtheme "Sleeping problems" and CORE-OM / PHQ-9 item that reports problems in sleeping).
2. "Possible yes" – When the sub-theme reports a problem that could have much probably been caused by a problem reported on CORE-OM or PHQ-9 (e. g., "I wake up very tired and feel sleepy at work" can possible be connected to a CORE-OM/PHQ-9 sleeping problems item).
3. "Possible no" – vague sub-themes, or general, that might be or not associated to the CORE-OM or PHQ-9 items.
4. "No" – Different content, so no clear matching.

When agreement could not be reached, a third judge was consulted and the original free-text responses on PSYCHLOPS were compared with the CORE-OM (or PHQ-9) items in order to provide more evidence whether the sub-theme was represented in CORE-OM or PHQ-9.

### **(4) Frequency Distributions and Descriptive Statistics**

After this qualitative analysis, using IBM SPSS Statistics 21®, we calculated:

- the relative frequency of each subtheme found in PSYCHLOPS pre-therapy version,

- the frequency of patients that indicated each sub-theme in PSYCHLOPS pre-therapy version,
- how many patients had, at least, one sub-theme not mapped in CORE-OM and PHQ-9,
- in those sub-themes that are not mapped in the CORE-OM and/or PHQ-9, which are the most frequent.



## 5. Results

All 107 patients completed the first problem question (Question 1) on PSYCHLOPS pre-version. Nineteen patients (17.7%) did not complete the question about a second problem (Question 2) and 23 patients (21.4%) did not complete the function question, giving a total of 279 responses on PSYCHLOPS pre-version.

Of the 107 patients, two patients did not complete the CORE-OM and three patients did not complete the PHQ-9.

### **(1) What is the quality of the items proposed by patients?**

The term “Well-formed” is proposed by Elliott (2012) and we considered that all the remaining categories describe items with quality problems.

Approximately one third of items 279 free-text items were classified as items Well-formed (30.6%). The most frequent quality issues were items with vague personal difficulties (32.3%), followed by multiple problems in the same response (21.5%) (see Table 4).

Since we have two samples from different backgrounds, we thought it was relevant to analyze the item quality separately for each sample. Interestingly Sample 2 presented a statistically significant higher number of low quality items than Sample 1 for problem 1 and problem 3 (See table 5).

During the classification process, two additional types of quality issues emerged: Multiple problems and Past problems; making a total of 6 quality item categories (see Table 4).

Table 4. *Item quality analysis per categories*

Item quality categories	Total number of responses on PSYCHLOPS (n=279)	Percentage (%)
1. Well-formed <sup>1</sup>	86	30.8%
2. Vague personal difficulties	90	32.3%
3. Goal	22	7.9%
4. General societal problems	14	5.0%
5. Other item quality issues (please describe)		
5.1 Multiple-problems	60	21.5%
5.2 Past-problems	7	2.5%

Table 5. *Item quality analysis per sample and problem*

Item quality analysis	Total numbers of items on Sample 1 (n=153)	Total numbers of items on Sample 2 (n=126)	Sample x item quality		
			$\chi^2$	<i>P</i>	<i>d.f.</i>
P1					
Well – formed	29 (52.7%)	5 (9.6%)	22.916	0.000	1
Low-quality	26 (47.3%)	47 (90.4%)			
P2					
Well-formed	19 (37.3%)	10 (27%)	1.015	0.314	1
Low-quality	32 (62.7%)	27 (73%)			
P3					
Well-formed	21 (44.7%)	2 (5.4%)	16.061	0.000	1
Low-quality	26 (55.3%)	35 (95.6%)			

<sup>1</sup> 'Well-formed' is the description adopted by Elliott (2012) All the remaining categories describe items with quality problems.

## **(2) What items are indicated by patients? (sub-themes)**

Four new sub-themes were found during the thematic analysis of the 279 free-text items: Attempted suicide, self-harm, studies-related problems, and justice-related problems; making a total of 65 sub-themes.

From the classification system with 65 sub-themes, only 51 were found in our sample, as presented in Table 8. The most common sub-themes identified were “Work-related problems”, which were reported by 26% (n=28) of the patients, followed by “Relationship difficulties: family – worry about another” (23%, n=25) and “Addiction” (19%, n=20).

It is also important to highlight the category "Relationship Difficulties" in general.

In the different sub-themes presented, 13 are from categories related with “Relationship Difficulties” (according to the type of relationship problem that the patient identifies and also according to the patient's role within the relationship – i.e. “Relationship difficulties: family – worry about another”; “Relationship difficulties: partner – forming”, etc...). Grouped together these 13 sub-themes represent 49.5% of the patient's responses.

These findings suggest that these sub-themes analyzed separately are not as significant when analyzed together.

As can be seen in Figure 1, we found some differences with regard to the responses of each sub-sample. However, the most evident subtheme is Addiction, is often identified in the drug and alcohol misuse sample (Sample 2) and never by patients undergoing psychiatric treatment (Sample 1).

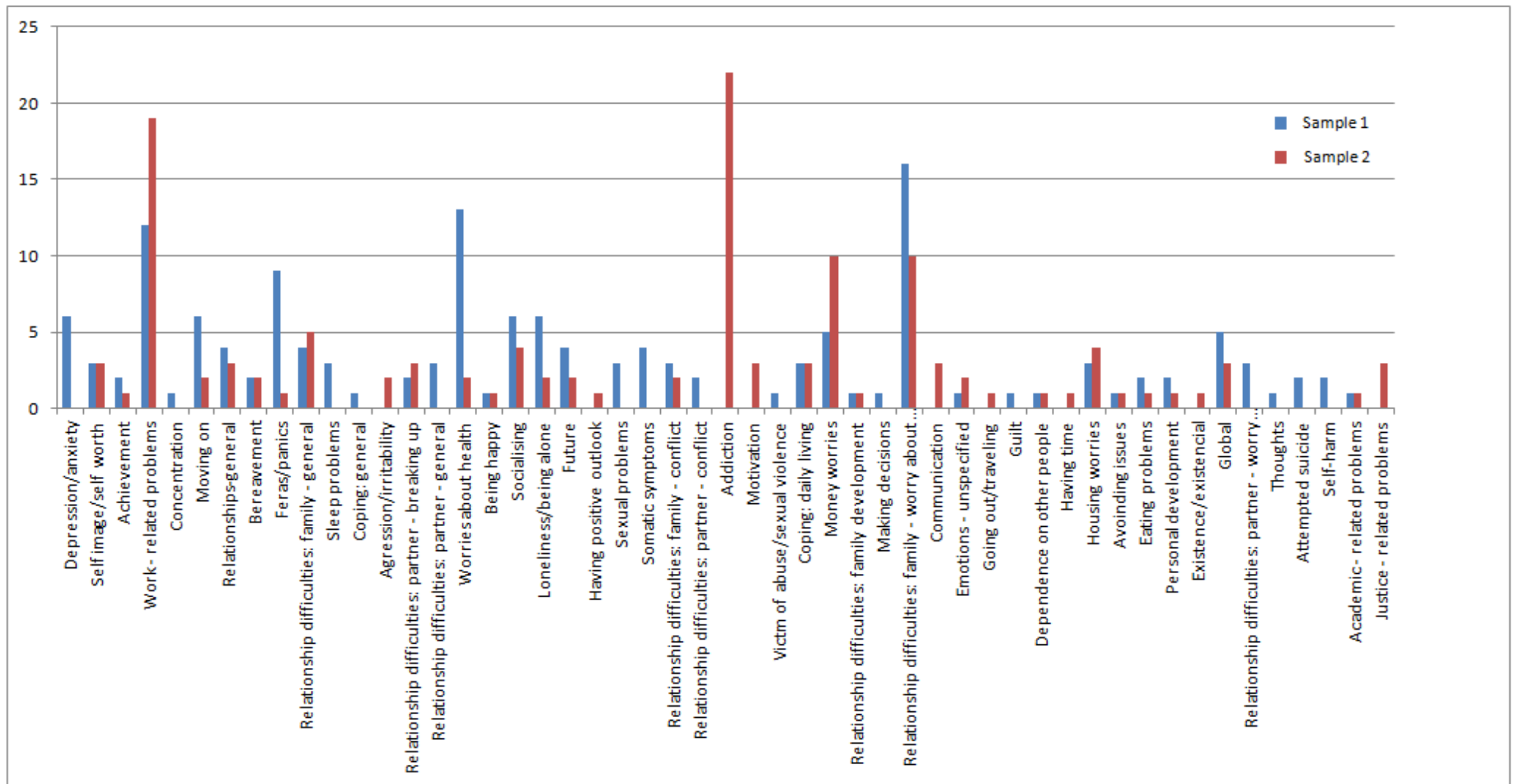


Figure 1. Separate analysis of the two samples, regarding the 65 sub-themes identified in PSYCHLOPS responses



### **(3) Are PSYCHLOPS sub-themes represented in CORE-OM and PHQ-9?**

Approximately one quarter of the 65 PSYCHLOPS sub-themes (n=17, 26.1%) were found not to be mapped to items of the CORE-OM (classified as “No”) – Work-related problems; Sexual problems; Another person’s illness; Money worries; Understanding self/events; Making decisions; Relationship difficulties: family – worry about another; Going out/traveling; Having time; Housing worries; Avoiding issues; Eating problems; Existence/existential; Global; Relationship difficulties: partner – worry about another; Academic-related problems; Justice-related problems (see Table 6. for more details of the matching process).

The proportion of sub-themes in the classification system, 43 (66.1%) were found not to be mapped to items of the PHQ-9 (classified as “No”) – Work – related problems; Moving on; Relationships – general; Fears/panics; Relationship difficulties: family – general; Coping: general; Aggression/irritability; Relationship difficulties: partner – breaking up; Relationship difficulties: partner – development; Relationship difficulties: partner – general; Worries about health; Being happy; Socializing; Loneliness/being alone; Sexual problems; Traumatic event; Relationship difficulties: family – conflict; Relationship difficulties: partner – conflict; Addiction; Another person’s illness; Relationship difficulties: family – breaking up; Victim of abuse/sexual violence; Coping: daily living; Money worries; Relationship difficulties: family – development; Understanding self/events; Making decisions; Relationship difficulties: family – worry about another; Going out/traveling; Guilt; Dependence on other people; Having time; Housing worries; OCD; Relationship difficulties: partner – forming; Avoiding issues; Coping: feelings; Existence/existential; Global; Relationship difficulties: family – caring; Relationship difficulties: partner – worry about another; Academic-related problems; Justice-related problems (see Table 7. for more details of the matching process).

Table 6. Matching table between PSYCHLOPS sub-themes and CORE-OM items

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Depression/anxiety	2; 11; 27	1; 4; 5; 9; 13; 14; 15; 16; 20; 23; 24; 31.	17; 18; 21; 28; 34.	6; 7; 8; 10; 12; 19; 22; 25; 26; 29; 30; 32; 33.	<i>"I felt nervous".</i>
Self image/self worth	4	7; 12; 21; 30; 33.	17; 24; 25; 27; 32.	1; 2; 3; 5; 6; 8; 9; 10; 11; 13; 14; 15; 16; 18; 19; 20; 22; 23; 26; 28; 29; 31; 34.	<i>"My lack of self-esteem and to what extent is influencing my children".</i>
Achievement	12; 21; 32.	7; 11; 31.	4; 5; 17.	1; 2; 3; 6; 8; 9; 10; 13; 14; 15; 16; 18; 19; 20; 22; 23; 24; 25; 26; 27; 28; 29; 30; 33; 34.	<i>"Not having my own income"</i>
Work-related problems				All 34 CORE-OM items.	<i>"The fact that I cannot achieve the goals at work"</i>
Concentration			5; 11; 21.	1; 2; 3; 4; 6; 7; 8; 9; 10; 12; 13; 14; 15; 16; 17; 18; 19; 20; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"Concentration at work"</i>
Moving on	20	7; 17; 21; 23; 31		1; 2; 3; 4; 5; 6; 8; 9; 10; 11; 12; 13; 14; 15; 16; 18; 19; 22; 24; 25; 26; 27; 28; 29; 30; 32; 33; 34.	<i>"Walking forward with life"</i>
Relationships – general	10; 26.	1; 3; 19; 25; 29; 33.	6; 22.	2; 4; 5; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 23; 24; 27; 28; 30; 31; 32; 34.	<i>"Confront people"</i>
Bereavement		14; 27.	1; 31.	2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 32; 33; 34.	<i>"The death of my father".</i>
Fears/panics	15.	2; 11; 13.	28.	1; 3; 4; 5; 6; 7; 8; 9; 10; 12; 14; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 33; 34.	<i>"I'm afraid of not having strength to handle what I'm going".</i>

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Relationship difficulties: family-general		1; 3; 10; 19; 25; 33.	6; 22; 29.	2; 4; 5; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 23; 24; 26; 27; 28; 30; 31; 32; 34.	<i>"The family"</i>
Sleep problems	18			1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"Sleep badly"</i>
Coping: general	7; 20.	17.		1; 2; 3; 4; 5; 6; 8; 9; 10; 11; 12; 13; 14; 15; 16; 18; 19; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"Know how I will respond when faced with this kind of problem..."</i>
Aggression/irritability	6; 22; 29; 34.			1; 2; 3; 4; 5; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 23; 24; 25; 26; 27; 28; 30; 31; 32; 33.	<i>"Keep me calm and do things calmly and without stress"</i>
Relationship difficulties: partner – breaking up		1	3; 10; 14; 19; 27.	2; 4; 5; 6; 7; 8; 9; 11; 12; 13; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 31; 32; 33; 34.	<i>"The separation with my wife"</i>
Relationship difficulties: partner – development		19	1; 3; 27; 31.	2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 32; 33; 34.	
Relationship difficulties: partner – general		19; 31.	1; 3; 27.	2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 32; 33; 34.	<i>"The way to deal with my husband"</i>
Relaxing	2; 11.	8.	13; 15; 28.	1; 3; 4; 5; 6; 7; 9; 10; 12; 14; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 33; 34.	
Worries about health	8	4	7; 14; 27; 34.	1; 2; 3; 5; 6; 9; 10; 11; 12; 13; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 31; 32; 33.	<i>"My health"</i>

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Being happy	4; 27	12; 14; 19; 26; 33.	1; 5; 20.	2; 3; 6; 7; 8; 9; 10; 11; 13; 15; 16; 17; 18; 21; 22; 23; 24; 25; 28; 29; 30; 31; 32; 34.	<i>“Cannot feel joy for the normal things, for the children for example”</i>
Socialising	1; 10; 26.	3; 29.	6; 22; 25; 33.	2; 4; 5; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 23; 24; 27; 28; 30; 31; 32; 34.	<i>“Having a night out. Going to a dinner. Without problems”</i> <i>“Being alone”</i>
Loneliness/being alone	1; 3; 26.	19		2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 27; 28; 29; 30; 31; 32; 33; 34.	
Future	31			1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 32; 33; 34.	<i>“I’m not sure of my professional future”</i>
Having positive outlook	31	12; 32		1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 33; 34.	<i>“Be positive”</i>
Sexual problems				All 34 CORE-OM items.	<i>“Having sexual intercourse with my wife”</i> <i>“Constant physical pain”</i>
Somatic symptoms	8	2; 14.		1; 3; 4; 5; 6; 7; 9; 10; 11; 12; 13; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	
Traumatic event		13; 28		1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 33; 34.	
Relationship difficulties: family – conflict		1; 3; 10; 19; 25; 33.	6; 22; 29.	2; 4; 5; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 23; 24; 26; 27; 28; 30; 31; 32; 34.	<i>“My father tease me and my mother and anything is god to start a discussion”</i>
Self-acceptance	4		9	1; 2; 3; 5; 6; 7; 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Relationship difficulties: partner – conflict		1; 3; 10; 19; 25; 33.	6; 22; 29.	2; 4; 5; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 23; 24; 26; 27; 28; 30; 31; 32; 34.	<i>“It is difficult to live and talk to my girlfriend...”</i>
Addiction			13; 28.	1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 33; 34.	<i>“Drug Addiction problem”</i>
Another person’s illness				All 34 CORE-OM items.	
Motivation	5	21; 32		1; 2; 3; 4; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 33; 34.	<i>“Unmotivated in my home”</i>
Relationship difficulties: family – breaking up		1	3; 10; 14; 19; 27.	2; 4; 5; 6; 7; 8; 9; 11; 12; 13; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 31; 32; 33; 34.	
Victim of abuse/sexual violence		13; 28; 33.	15	1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 14; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 34.	<i>“Psychological violence”</i>
Coping: daily living	7; 17; 20.	11; 23.		1; 2; 3; 4; 5; 6; 8; 9; 10; 12; 13; 14; 15; 16; 18; 19; 21; 22; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>“I’m not able to do the normal life...”</i>
Money worries				All 34 CORE-OM items.	<i>“Not enough money”</i>
Relationship difficulties: family – development		19	1; 3; 27; 31.	2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 32; 33; 34.	<i>“Not having family”</i>

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Understanding self/events				All 34 CORE-OM items	
Making decisions				All 34 CORE-OM items	<i>"It is hard for me to make decisions for the future"</i>
Relationship difficulties: family – worry about another				All 34 CORE-OM items.	<i>"The problem that worries me most is the disease of my mother..."</i>
Communication	10			1; 2; 3; 4; 5; 6; 7; 8; 9; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"Communicate"</i>
Emotions - unspecified		2; 14; 27.		1; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 31; 32; 33; 34.	<i>"Things around me affect me a lot and make me down"</i>
Going out/traveling				All 34 CORE-OM items.	<i>"Travel"</i>
Guilt	30			1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 31; 32; 33; 34.	<i>"Following an abortion"</i>
Outlook on life	12			1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	
Dependence on other people		3		1; 2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"The fact that I had never lived alone, at my own risk"</i>
Having time				All 34 CORE-OM items.	<i>"I lose a lot of time"</i>
Housing worries				All 34 CORE-OM items.	<i>"Housekeeping"</i>

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
OCD (Obsessive-compulsive disorder)		2; 11; 13; 28.		1; 3; 4; 5; 6; 7; 8; 9; 10; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 29; 30; 31; 32; 33; 34.	
Relationship difficulties: partner – forming		19	1; 3; 27; 31.	2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 28; 29; 30; 32; 33; 34.	
Avoiding issues				All 34 CORE-OM items.	<i>“Go search my personal things”</i>
Coping: feelings		13		1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	
Eating problems				All 34 CORE-OM items.	<i>“Eat”</i>
Personal development			4; 32	1; 2; 3; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 33; 34.	<i>“The lack of emotional stability...”</i>
Existence/existential				All 34 CORE-OM items	<i>“The feel that most of the time it's not me...”</i>
Global				All 34 CORE-OM items	<i>“My well-being, my life in general.”</i>
Relationship difficulties: family – caring			3; 19.	1; 2; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	
Relationship difficulties: partner – worry about another				All 34 CORE-OM items.	<i>“My husband’s problem”</i>
Suicidal thoughts	9; 16; 24.			1; 2; 3; 4; 5; 6; 7; 8; 10; 11; 12; 13; 14; 15; 17; 18; 19; 20; 21; 22; 23; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	

PSYCHLOPS Sub-theme	CORE-OM items				Free text PSYCHLOPS response (e.g.)
	Definite Yes	Possible Yes	Possible No	No	
Thinking rationally			13	1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	
Thoughts		13	9; 24	1; 2; 3; 4; 5; 6; 7; 8; 10; 11; 12; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34.	<i>"My way of thinking, my negativity "not seeing anything positive..."</i>
Attempted suicide	34	9; 16; 24.		1; 2; 3; 4; 5; 6; 7; 8; 10; 11; 12; 13; 14; 15; 17; 18; 19; 20; 21; 22; 23; 25; 26; 27; 28; 29; 30; 31; 32; 33.	<i>"I tried to kill myself"</i>
Self-harm	34	9; 16; 24.		1; 2; 3; 4; 5; 6; 7; 8; 10; 11; 12; 13; 14; 15; 17; 18; 19; 20; 21; 22; 23; 25; 26; 27; 28; 29; 30; 31; 32; 33.	<i>"Cut myself"</i>
Academic-related problems				All 34 CORE-OM items.	<i>"The studies"</i>
Justice-related problems				All 34 CORE-OM items.	<i>"My problem with justice"</i>

Note. The numbers on this table correspond to CORE-OM items: 1. I have felt terribly alone and isolated; 2. I have felt tense, anxious or nervous; 3. I have felt I have someone to turn to for support when needed; 4. I have felt O.K. about myself; 5. I have felt totally lacking in energy and enthusiasm; 6. I have been physically violent to others; 7. I have felt able to cope when things go wrong; 8. I have been troubled by aches, pains or other physical problems; 9. I have thought of hurting myself; 10. Talking to people has felt too much for me; 11. Tension and anxiety have prevented me doing important things; 12. I have been happy with the things I have done; 13. I have been disturbed by unwanted thoughts and feelings; 14. I have felt like crying; 15. I have felt panic or terror; 16. I made plans to end my life; 17. I have felt overwhelmed by my problems; 18. I have difficulty getting to sleep or staying asleep; 19. I have felt warmth and affection for someone; 20. My problems have been impossible to put to one side; 21. I have been able to do most things I needed to; 22. I have threatened or intimidated another person; 23. I have felt despairing or hopeless; 24. I have thought it would be better if I were dead; 25. I have felt criticized by other people; 26. I have thought I have no friends; 27. I have felt unhappy; 28. Unwanted images or memories have been distressing me; 29. I have been irritable when with other people; 30. I have thought I am to blame for my problems and difficulties; 31. I have felt optimistic about my future; 32. I have achieved the things I wanted to; 33. I have felt humiliated or shamed by other people; 34. I have hurt myself physically or taken dangerous risks with my health.



Table 7. Matching table between PSYCHLOPS sub-themes and PHQ-9 item

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Depression/anxiety	2	1; 6; 9	3; 4; 5; 7; 8.		<i>"I felt nervous".</i>
Self image/self worth	6			1; 2; 3; 4; 5; 7; 8; 9.	<i>"My lack of self-esteem and to what extent is influencing my children".</i>
Achievement			2	1; 3; 4; 5; 6; 7; 8; 9.	<i>"Not having my own income"</i>
Work-related problems				All PHQ-9 items.	<i>"The fact that I cannot achieve the goals at work"</i>
Concentration	7			1; 2; 3; 4; 5; 6; 8; 9.	<i>"Concentration at work"</i>
Moving on				All PHQ-9 items.	<i>"Walking forward with life"</i>
Relationships – general				All PHQ-9 items.	<i>"Confront people"</i>
Bereavement			2	1; 3; 4; 5; 6; 7; 8; 9.	<i>"The death of my father".</i>
Fears/panics				All PHQ-9 items.	<i>"I'm afraid of not having strength to handle what I'm going".</i>
Relationship difficulties: family-general				All PHQ-9 items	<i>"The family"</i>
Sleep problems	3			1; 2; 4; 5; 6; 7; 8; 9.	<i>"Sleep badly"</i>
Coping: general				All PHQ-9 items	<i>"Know how I will respond when faced with this kind of problem..."</i>
Aggression/irritability				All PHQ-9 items.	<i>"Keep me calm and do things calmly and without stress"</i>

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Relationship difficulties: partner – breaking up				All PHQ-9 items	<i>“The separation with my wife”</i>
Relationship difficulties: partner – development				All PHQ-9 items.	
Relationship difficulties: partner – general				All PHQ-9 items	<i>“The way to deal with my husband”</i>
Relaxing			8	1; 2; 3; 4; 5; 6; 7; 9.	
Worries about health				All PHQ-9 items	<i>“My health”.</i>
Being happy				All PHQ-9 items.	<i>“Cannot feel joy for the normal things, for the children for example”</i>
Socialising				All PHQ-9 items.	<i>“Having a night out. Going to a dinner. Without problems”</i>
Loneliness/being alone				All PHQ-9 items.	<i>“Being alone”</i>
Future		2		1; 3; 4; 5; 6; 7; 8; 9.	<i>“I’m not sure of my professional future”</i>
Having positive outlook		2		1; 3; 4; 5; 6; 7; 8; 9.	<i>“Be positive”</i>
Sexual problems				All PHQ-9 items	<i>“Having sexual intercourse with my wife”</i>
Somatic symptoms	4	8		1; 2; 3; 5; 6; 7; 9.	<i>“Constant physical pain”</i>
Traumatic event				All PHQ-9 items.	

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Relationship difficulties: family – conflict				All PHQ-9 items.	<i>“My father tease me and my mother and anything is god to start a discussion”</i>
Self-acceptance	6			1; 2; 3; 4; 5; 7; 8; 9.	
Relationship difficulties: partner – conflict				All PHQ-9 items.	<i>“It is difficult to live and talk to my girlfriend...”</i>
Addiction				All PHQ-9 items.	<i>“Drug Addiction problem”</i>
Another person’s illness				All PHQ-9 items.	
Motivation	1	2		1; 3; 4; 5; 6; 7; 8; 9.	<i>“Unmotivated in my home”</i>
Relationship difficulties: family – breaking up				All PHQ-9 items.	
Victim of abuse/sexual violence				All PHQ-9 items.	<i>“Psychological violence”</i>
Coping: daily living				All PHQ-9 items.	<i>“I’m not able to do the normal life...”</i>
Money worries				All PHQ-9 items.	<i>“Not enough money”</i>
Relationship difficulties: family – development				All PHQ-9 items.	<i>“Not having family”</i>

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Understanding self/events				All PHQ-9 items.	
Making decisions				All PHQ-9 items.	<i>"It is hard for me to make decisions for the future"</i>
Relationship difficulties: family – worry about another				All PHQ-9 items.	<i>"The problem that worries me most is the disease of my mother..."</i>
Communication		8		1; 2; 3; 4; 5; 6; 7; 9	<i>"Communicate"</i>
Emotions – unspecified		6		1; 2; 3; 4; 5; 7; 8; 9	<i>"Things around me affect me a lot and make me down"</i>
Going out/traveling				All PHQ-9 items.	<i>"Travel"</i>
Guilt				All PHQ-9 items.	<i>"Following an abortion"</i>
Outlook on life		2		1; 3; 4; 5; 6; 7; 8; 9	
Dependence on other people				All PHQ-9 items.	<i>"The fact that I had never lived alone, at my own risk"</i>
Having time				All PHQ-9 items.	<i>"I lose a lot of time"</i>
Housing worries				All PHQ-9 items.	<i>"Housekeeping"</i>
OCD (Obsessive-compulsive disorder)				All PHQ-9 items.	
Relationship difficulties: partner – forming				All PHQ-9 items.	

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Avoiding issues				All PHQ-9 items.	<i>"Go search my personal things"</i>
Coping: feelings				All PHQ-9 items.	
Eating problems	5			1; 2; 3; 4; 6; 7; 8; 9.	<i>"Eat"</i>
Personal development		6		1; 2; 3; 4; 5; 7; 8; 9.	<i>"The lack of emotional stability..."</i>
Existence/existential				All PHQ-9 items.	<i>"The feel that most of the time it's not me..."</i>
Global				All PHQ-9 items.	<i>"My well-being, my life in general."</i>
Relationship difficulties: family – caring				All PHQ-9 items.	
Relationship difficulties: partner – worry about another				All PHQ-9 items.	<i>"My husband's problem"</i>
Suicidal thoughts	9			1; 2; 3; 4; 5; 6; 7; 8.	
Thinking rationally			9	1; 2; 3; 4; 5; 6; 7; 8.	
Thoughts		9		1; 2; 3; 4; 5; 6; 7; 8	<i>"My way of thinking, my negativity "not seeing anything positive..."</i>
Attempted suicide			9	1; 2; 3; 4; 5; 6; 7; 8	<i>"I tried to kill myself"</i>
Self-harm			9	1; 2; 3; 4; 5; 6; 7; 8	<i>"Cut myself"</i>
Academic-related problems				All PHQ-9 items.	<i>"The studies"</i>

PSYCHLOPS Sub-theme	PHQ-9 items				Free text PSYCHLOPS response (e.g.)
	Yes	Possible Yes	Possible No	No	
Justice-related problems				All PHQ-9 items.	<i>"My problem with justice"</i>

Note. The numbers on this table correspond to PHQ-9 items: 1. Little interest or pleasure in doing things; 2. Feeling down, depressed, or hopeless; 3. Trouble falling or staying asleep, or sleeping too much; 4. Feeling tired or having little energy; 5. Poor appetite or overeating; 6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down; 7. Trouble concentrating on things, such as reading the newspaper or watching television; 8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual; 9. Thoughts that you would be better off dead or of hurting yourself in some way.

#### **(4) Do CORE-OM and PHQ-9 cover all problems indicated in PSYCHLOPS?**

Approximately two thirds of the patients (n=79; 73.8%) reported at least one response that did not map to a CORE-OM item. The most frequent sub-themes which did not feature on CORE-OM were:

- “Work-related problems” (26%),
- “Relationship difficulties: family – worry about another” (23%),
- “Money worries” (14%).

Concerning PHQ-9, almost every patient (n= 103; 96.2%) reported at least one response that did not map to a PHQ-9 item. The most frequent sub-themes which did not feature on PHQ-9 were:

- “Work-related problems” (26%)
- “Relationship difficulties: family – worry about another” (23%)
- “Addiction” (19%)
- “Money worries” (14%).

Table 8 displays an overview of our analysis: the sub-themes identified by patients in PSYCHLOPS (from the most to the least common) and their respective correspondence with the nomothetic measures (CORE-OM and PHQ-9).

Table 8. Summary of 65 sub-themes on PSYCHLOPS, the relative frequency of each sub-theme found, the frequency of patients that indicated each sub-theme and the relationship with CORE-OM and PHQ-9.

PSYCHLOPS Sub-themes	Total number of responses on PSYCHLOPS (n=279)	Total number (%) of patients making each		
		PSYCHLOPS response (n=107)	Matching with CORE-OM	Matching with PHQ-9
Work-related problems	31	28 (26%)	No	No
Relationship difficulties: family – worry about another	25	25 (23%)	No	No
Addiction	22	20 (19%)	Possible no	No
Money worries	17	15 (14%)	No	No
Worries about health	15	11 (10%)	Yes	No
Fears/Panics	10	10 (9%)	Yes	No
Socialising	10	10 (9%)	Yes	No
Relationship difficulties: family – general	9	9 (8%)	Possible yes	No
Moving on	8	8 (7%)	Yes	No
Loneliness/ being alone	8	8 (7%)	Yes	No
Global	8	8 (7%)	No	No
Relationships-general	7	7 (7%)	Yes	No
Housing worries	7	7 (7%)	No	No
Self image/self worth	6	6 (6%)	Yes	Yes
Future	6	6 (6%)	Yes	Possible yes
Coping: daily living	6	6 (6%)	Yes	No
Depression/anxiety	6	5 (5%)	Yes	Yes
Relationship difficulties: family – conflict	5	5 (5%)	Possible yes	No
Relationship difficulties: partner – breaking up	5	5 (5%)	Possible yes	No
Somatic symptoms	4	4 (4%)	Yes	Yes
Bereavement	4	3 (3%)	Possible yes	Possible no
Sleep problems	3	3 (3%)	Yes	Yes
Relationship difficulties: partner – general	3	3 (3%)	Possible yes	No
Motivation	3	3 (3%)	Yes	Yes
Communication	3	3 (3%)	Yes	Possible yes



PSYCHLOPS Sub-themes	Total number of responses on PSYCHLOPS (n=279)	Total number (%) of patients making each		
		PSYCHLOPS response (n=107)	Matching with CORE-OM	Matching with PHQ-9
Emotions – unspecified	3	3 (3%)	Possible yes	Possible yes
Relationship difficulties: partner – worry about another	3	3 (3%)	No	No
Justice-related problems	3	3 (3%)	No	No
Achievement	3	3 (3%)	Yes	Possible no
Sexual problems	3	2 (2%)	No	No
Eating problems	3	2 (2%)	No	Yes
Aggression/irritability	2	2 (2%)	Yes	No
Relationship difficulties: family – development	2	2 (2%)	Possible yes	No
Dependence on other people	2	2 (2%)	Possible yes	No
Avoiding issues	2	2 (2%)	No	No
Personal development	2	2 (2%)	Possible no	Possible yes
Attempted suicide	2	2 (2%)	Yes	Possible no
Self-harm	2	2 (2%)	Yes	Possible no
Academic-related problems	2	2 (2%)	No	No
Being happy	2	2 (2%)	Yes	No
Relationship difficulties: partner – conflict	2	1 (1%)	Possible yes	No
Concentration	1	1 (1%)	Possible no	Yes
Coping: general	1	1 (1%)	Yes	No
Having positive outlook	1	1 (1%)	Yes	Possible yes
Victim of abuse/sexual violence	1	1 (1%)	No	No
Making decisions	1	1 (1%)	No	No
Going out/traveling	1	1 (1%)	No	No
Guilt	1	1 (1%)	Yes	No
Having time	1	1 (1%)	No	No
Existence/existential	1	1 (1%)	No	No
Thoughts	1	1 (1%)	Possible yes	Possible yes

PSYCHLOPS Sub-themes	Total number of responses on PSYCHLOPS (n=279)	Total number (%) of patients making each		
		PSYCHLOPS response (n=107)	Matching with CORE-OM	Matching with PHQ-9
<b>Subthemes not used in the analysis for this study</b>				
Relationship difficulties: partner – development	0	0	Possible yes	No
Relaxing	0	0	Yes	Possible no
Traumatic event	0	0	Possible yes	No
Self-acceptance	0	0	Yes	Yes
Another person’s illness	0	0	No	No
Relationship difficulties: family – breaking up	0	0	Possible yes	No
Understanding self/events	0	0	No	No
Outlook on life	0	0	Yes	Possible yes
OCD (Obsessive-compulsive disorder)	0	0	Possible yes	No
Relationship difficulties: partner – forming	0	0	Possible yes	No
Coping: feelings	0	0	Possible yes	No
Relationship difficulties: family – caring	0	0	Possible no	No
Suicidal thoughts	0	0	Yes	Yes
Thinking rationally	0	0	Possible no	Possible no

## 6. Discussion

This study aimed to investigate to what extent patients propose items in PSYCHLOPS that are not covered by two well-established standardized measures, the CORE-OM and PHQ-9.

Approximately one-quarter of PSYCHLOPS sub-themes were found not to be featured in CORE-OM, and approximately three-quarter of sub-themes were not covered by PHQ-9, particularly the most common sub-theme “work-related problems”. This difference in results is mainly due to the fact that CORE-OM is a measure with 34 items that assesses different domains, including patient well-being, problems and symptoms, functioning and risk and, on the other hand, PHQ-9 is a specific depression scale that consists of the actual nine criteria on which the diagnosis of DSM-IV depressive disorders is based. Therefore, taking into account these characteristics it is expected that the CORE-OM present a large number of matches with the subthemes identified by patients.

Regarding the results obtained in the CORE-OM is possible to compare with the results from the initial study by Ashworth and colleagues (2007).

In this initial study in 2007, the authors found that 44% of subthemes were not covered by CORE-OM items. An important point that can justify the difference in our results is the fact that we have redone the matching process with CORE-OM. Initially Ashworth and colleagues (2007) used an ordinal scale with three matching points (Yes, Possible yes and No) and for this study we felt the need to remake the scale starting to use a similarity ordinal 4-point scale (Definite yes, Possible yes, Possible no and No). This allows us to make a more detailed correspondence between the sub-themes of PSYCHLOPS and CORE-OM items, possibly reducing the non-match from 44% to 26.1%.

Also in the study conducted by Ashworth and colleagues (2007) we can see that initially 60% of patients reported at least one sub-theme that did not map to a CORE-OM item, however at 73.8% our study have found a higher percentage of patients reporting concerns that did not feature on CORE-OM. Note that in relation to PHQ-9 we found that 96.2% of patients reported at least one problem that was not covered by PHQ-9 items, reinforcing our results.

With this and reaffirming the information already given by Ashworth and colleagues (2007) the use of PSYCHLOPS is not redundant since captures the information that the patient considers relevant which is not measured by nomothetic measures.

On the other hand, it seems to exist some differences between the nomothetic measures in proximity to PSYCHLOPS, so it would be important to replicate this study using other nomothetic measures.

The CORE-OM and the PHQ-9, as with any nomothetic measure, passed on more general problems and sets aside problems such as work and relationships, which as we have seen in these results are extremely important for patients. In this study were identified 65 sub-themes, and as we had anticipated, according to the existing literature (Ashworth et al., 2007; Robinson et al., 2006; Czachowski et al., 2011; Hédinsson et al., 2013; Ashworth et al., 2004; Sales & Alves, 2012; Ashworth et al., 2008; Ashworth et al., 2005a; Ashworth et al., 2005b), responses were complex, reflecting the multifaceted nature of problems experienced by the patients with mental health problems.

The most common sub-theme identified was “Work-related problems”, which were reported by 26% of patients. This result is consistent with the economic crisis currently affecting Portugal – in a study conducted in eight European countries by the insurance company *Zurich*® (2012), almost 40% of Portuguese identifies unemployment as their greatest risk and concern.

It is understood the difficulty in creating such specific items that can be applied to patients with difficulties at work, for example. However the finding that the majority of patients reported at least one response that did not map to a CORE-OM or PHQ-9 item demonstrates the magnitude of non-intersection of the patients’ problems and these two nomothetic measures items.

Given the more methodological aspects, the item quality is one of the critical points of PGOM and that has to be studied. In this research only a third of the items had the highest quality and in the alcohol and drug misuse sample (Sample 2) the items are vaguer. Therefore, it is necessary to understand if this is due to the population's characteristic, which can be more elusive. Being the sample 2 mainly consisted of patients with addiction problems, several studies show that most addiction drugs may induce adverse effects on brain structures associated with cognitive functions, such as memory and learning (e.g. reading and writing capabilities), attention, risk taking, motivation and mood (Dalley, et al., 2005; Kelley, et al., 2005; Kenney & Gould, 2008; Lyvers & Yakimoff, 2003; Moriyama, et al., 2006; Pope, et al., 2001). However we cannot be sure that these are the reasons for the difference in item quality results.

This suggests that further studies are needed with different populations and at the level of the item-generation process.

Separate analysis of the two samples, regarding the sub-themes identified in PSYCHLOPS revealed some differences. The sub-theme “Addiction” is repeatedly identified by patients of Sample 2 and never by patients of Sample 1. As expected this result is justified by the fact that the sample 2 consists in patients with addiction

problems. These results validate PSYCHLOPS as a measure, since it is expected that patients with addiction problems would mention such problems.

Therefore, PSYCHLOPS is a sensitive measure that seems to capture the problems/specific clinical conditions of patients. On the other hand, this shows that it is necessary to conduct studies on the problems identified in PGOMs in several populations to test this same flexibility.

### **Limitations of the study and further work**

The first limitation to this study is that our method of determining whether a sub-theme was represented in a CORE-OM or PHQ-9 item might be questioned. However to avoid errors, we felt the need to review the initial matching method, and we were able to add more categories. Also the matching process was performed by two independent judges and in case of disagreement a third judge was consulted.

Another limitation to the study is related to the item quality. As can be seen in the results, the item quality is relatively low, analyzing the samples together or separately. To work around this limitation it would be interesting if the investigator, during the application of PSYCHLOPS asked for clarification of the items with low quality (i.e. "You wrote that your main concern is relationships, could you be a little more specific?"), to increase the item quality and consequently have a better perception of the patient's clinical condition. In future studies it would be interesting to compare the level of item quality in the patient's response and the revised response by the investigator.

Despite the limitations presented, this research shows positive aspects, such as the fact that we are collecting data from clinical populations. Also the fact that we have used two different clinical samples allowed us a greater diversity of results.

For further suggestions, beyond what was already mentioned, make sense to think in an investigation in which (in addition to PSYCHLOPS) was also used a nomothetic measure focused at the problems identified by the patients in PSYCHLOPS. With this, we will try to understand the impact that a new, more specific measure would have on the results of the investigation.

For example, in our study the most common sub-theme identified by patients was "work-related problems" and doing a quick search, it's very easily to find the "Work-related stress questionnaire" (Health and Safety Executive, n. d.), a simple nomothetic measure with 39 items related to problems in the work place.

In repeating our study, it would be important to try to understand whether this new instrument would give us useful information or might itself miss a lot of the employment issues stated by our patients.

## **7. Main conclusions**

The present study planned a thematic analysis of responses elicited by PSYCHLOPS, and to identify whether subthemes featuring on this PGOM also featured on the nomothetic measures used in the analysis (Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM); Patient Health Questionnaire – 9 (PHQ-9)).

We can see in the 279 responses to PSYCHLOPS, the most common sub-theme identified by the patients was “Work-related problems” which is consistent with the economic crisis currently affecting Portugal.

Concerning the nomothetic measures approximately one-quarter of sub-themes were found not to be featured in CORE-OM, and approximately three-quarter of sub-themes were found not to be featured in PHQ-9, particularly the most common sub-theme “work-related problems”.

It also can be stated that the majority of patients reported at least one response that did not map to a CORE-OM or PHQ-9 item.

Finally, regarding clinical implications, the results of this research suggest that the suppleness of idiographic measures can capture the complexity and diversity of concerns for each patient, and it is important to listen to the patient and cause them to feel involved in the treatment assessment.





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