


Personal growth initiative among Industrial Psychology students in a higher education institution in South Africa



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Orientation: Personal growth initiative (PGI) is an important characteristic of workplace counsellors. Industrial and organisational (I-O) psychologists often assist employees with counselling for work-related and personal problems, and therefore PGI is an important research topic for this profession.

Research purpose: The purpose of this study was to measure the PGI of I-O psychology students in a higher education institution in South Africa, as well as to explore differences in PGI between demographic groups.

Motivation: According to the scope of practice for psychologists, growth and development of employees form part of an I-O psychologist's responsibilities. PGI is an important characteristic of I-O psychologists as it enables them to efficiently assist employees in growth and development processes.

Research design, approach and method: A cross-sectional survey design was used. A purposive non-probability sample ($N = 568$) of I-O psychology students was taken from a higher education institution in South Africa. A biographical questionnaire and the personal growth initiative scale (PGIS) were used as measuring instruments.

Main findings: The results indicated that (1) the PGIS is a valid and reliable measure of PGI, (2) PGI is prevalent amongst I-O psychology students and (3) PGI differs between certain demographic groups.

Practical implications: The findings of this study will assist in the future development of a training programme for I-O psychology students to equip them with the counselling skills they need to function in a counselling role.

Contribution: This study contributes to knowledge regarding the importance of PGI for I-O psychology students. The study will also assist higher education institutes to adapt their training programmes in order to prepare I-O psychology students for their role as counsellors. More knowledge will also be provided with regard to the functioning of the PGIS.

Introduction

Empowering employees to manage their stress and problems at work is one of the major domains of industrial and organisational (I-O) psychology practitioners. The tasks of I-O psychologists as workplace counsellors relate to nurturing well-adjusted employees and enabling their optimal growth (Bergh, 2012), as well as remodelling fixed mindsets to allow individuals to become more flexible and develop growth mindsets (Veldsman, 2014). Barnard and Fourie (2007) indicated that I-O psychology practitioners have a responsibility as counsellors in current and future roles within the I-O profession and advocated equipping I-O psychology practitioners with the necessary knowledge, skills and competence to act appropriately within the role of counsellors. When training I-O psychology practitioners as counsellors, particular attention should be paid to the trainees' intrapersonal awareness. Intrapersonal awareness refers to a process of personal growth and striving for functioning at an intrapersonal optimal level (Wissing & Cilliers, 1993). Stimulating intrapersonal awareness is a prerequisite for helpers working with people (Barkhuizen, Jorgensen & Brink, 2014; Cilliers, 2000; Rothmann, 1996).

Personal growth initiative (PGI) is a promising antecedent of optimal functioning and well-being (Robitschek, 1998). An individual demonstrates PGI when he or she has a deliberate and active desire to grow in the most crucial areas of his or her life (Robitschek *et al.*, 2012). Robitschek

(1999) defined PGI as intentional participation in the self-change process that can be behavioural or cognitive and can take place in any life sphere and that yields changes associated with intentional development. Individuals with high PGI take advantage of opportunities and intentionally develop themselves (Robitschek *et al.*, 2012; Robitschek & Cook, 1999). This study used Robitschek's (1998) personal growth initiative scale (PGIS) to study the PGI of I-O psychology students.

Research objectives and purpose

Based on the importance of interpersonal awareness for I-O psychology practitioners, the main objective of this study was to investigate the prevalence of PGI amongst I-O psychology students. The specific objectives of the study included the following: (1) to determine the construct validity of the PGIS within a South African student sample, (2) to determine the prevalence of the different levels of PGI amongst I-O psychology students and (3) to measure whether significant differences exist between demographic groups (gender, age and ethnicity) in terms of their PGI.

There is currently a paucity of research relating to I-O psychology students' PGI and this study thus contributes to the literature on I-O psychology by providing a better understanding of the PGI of I-O psychology students. It also contributes to the literature in relation to the measurement of PGI. In addition, it contributes to knowledge regarding the importance of personal growth as a characteristic of an effective counsellor. This study also aims to make recommendations concerning the ways in which PGI can be incorporated in the training of I-O psychologists.

Literature review

The I-O psychologist

The South African Health Professions Act (HPCSA, 2011) defined an I-O psychologist as a person who deals with the work-related issues of well-adjusted adults by applying principles of psychology in order to optimise the effectiveness and well-being of the individual, the group and the organisation as a whole. I-O psychology relies on the theory and methodology of psychology to influence human behaviour in the workplace (Bergh, 2012). According to Schreuder and Coetzee (2010), the role of the I-O psychologist relates to optimising the fit between the employee and the workplace. I-O psychology students undergo extensive training before qualifying as I-O psychologists. The training involves obtaining a relevant master's degree, completing a 12-month internship, writing the national examination (with a minimum of 70%) and registering with the Health Professions Council (2011) as psychologists. Registered I-O psychologists' actions are regulated by the scope of the profession of psychology as well as the scope of practice of I-O psychologists (HPCSA, 2011).

In terms of scope of practice, the tasks of I-O psychologists include the following (HPCSA, 2011): (1) applying principles

of psychology to the workplace, (2) utilising assessment practices, (3) facilitating individual and group processes, (4) exercising consumer psychological practices, (5) conducting ergonomic evaluations, (6) performing psychological interventions and short-term therapeutic counselling interventions and (7) conducting assessments. I-O psychology practitioners also adhere to a code of ethics to ensure ethical practice as psychologists. The HPCSA can institute disciplinary measures against any I-O psychologists who do not adhere to this code (HPCSA, 2011).

According to the South African Department of Health (2012), I-O psychology practitioners are permitted to perform a limited number of psychological interventions within their scope of practice. The practitioners may perform counselling interventions in order to diagnose work-related and organisational challenges and problems. The aim of the counselling is to increase the personal functioning of groups and individuals in work-related contexts. According to Strümpfer (2007), individuals' deep-rooted problems are a concern for the I-O psychology practitioners and result in workplace scenarios where I-O psychology practitioners play the role of workplace counsellors. The literature indicates that employees are influenced by issues such as family responsibilities, culture and traumatic events (Van Vuuren, 2010). The work-related issues that I-O practitioners manage can also include traumatic incidents, such as harassment, emotional abuse and victimisation (Aquino & Thau, 2009). Another significant workplace incident facing I-O psychology is HIV/AIDS (Motsoaledi, 2011). South Africa contains 0.7% of the global population but carries 17% of the HIV/AIDS global burden (Motsoaledi, 2011), making HIV/AIDS a force to be considered in the workplace. Additional work-related problems requiring counselling include stress, negative attitudes at work and burnout (Preece, Cayley, Scheuchl & Lam, 2005). The components of burnout (depersonalisation, personal accomplishment and exhaustion) often result in employees seeking interventions (Friedman, 2000) for the effects of burnout.

According to McLeod and McLeod (2011), workplace counselling has the potential to decrease the effects of depression, stress and anxiety for the majority of the workforce. A study conducted by Collins *et al.* (2012) found that the provision of counselling services in the workplace for distressed employees has a positive effect on employees' well-being. It is thus crucial that I-O psychology practitioners deal with the organisation as a whole, as well as with individuals' well-being (see Rothmann & Cilliers, 2007; Schreuder, 2001). This will result in improvements in levels of PGI as well as improvements in the quality of the organisation and the individuals' lives (Rothmann & Cilliers, 2007; Schreuder & Coetzee, 2010).

The I-O psychologist as a counsellor

Workplace counselling is an effective way of assisting employees to cope with psychological, emotional and

behavioural problems (McLeod & McLeod, 2011). According to Bergh (2012), the tasks of I-O psychologists as workplace counsellors relate to diagnosing and treating the symptoms of workers with emotional conflicts. The literature (Rothmann, 2002; Seligman & Csikszentmihalyi, 2014; Strümpher, 2007) also suggests the importance of a more positive approach to promoting employee and organisational well-being. This approach implies that simply addressing emotional problems is insufficient and growth and optimal functioning must be developed. Based on the existing literature, this study formulated the following working definition for I-O psychologists as workplace counsellors: 'assisting employees with emotional and work-related problems by diagnosing and treating symptoms by means of short-term therapeutic interventions in order to ultimately assist the employee to function at an optimal level'. An important consideration in relation to this definition is that the I-O psychologist as a workplace counsellor should have an effective referral network and should know when to refer to a more relevant professional practitioner. The workplace counsellor will often also work as part of an intervention process, for example, health promotion activities (see Bergh, 2012).

According to Rothmann and Van Aardt (2002), graduates in the behavioural sciences often lack the interpersonal skills, knowledge and intrapersonal awareness to be able to perform in a counselling role. It is important for a facilitator of people to have effective interpersonal skills in order to be aware of the clients' emotions, feelings and perceptions. When helpers show effective interpersonal skills, they are likely to relate better to the experiences of others (see Carkhuff, 2000). Typical interpersonal skills include utilising microskills such as questioning, minimum encouragement, paraphrasing, clarifying, reflecting, summarising and giving information (Ivey, 2013).

Possessing effective interpersonal skills often leads to enhanced intrapersonal awareness (see Carkhuff, 2000). Intrapersonal awareness, also referred to as self-awareness (Kubica & LaForest, 2014), can best be defined as a self-actualising concept identified by scholars such as Rogers (1970), Frankl (1985) and Allport (1961). According to Rothmann (1996), when a person is intrapersonally aware, she or he tends to function optimally as an individual. Individuals who possess intrapersonal awareness have constructive interactions with their surroundings whilst they are constantly growing (Rogers, 1980). Training in intrapersonal awareness relates to the individual's PGI, optimal functioning and self-actualisation. According to Kubica and LaForest (2014), intrapersonal awareness can be seen as the fundamental driver of interpersonal skills and is therefore important for an I-O psychologist. A promising antecedent of intrapersonal awareness (optimal functioning and well-being) is PGI (Robitschek, 1998).

Personal growth initiative

PGI refers to the effective and purposeful engagement in the pursuit of personal growth, which includes changing specific

aspects of one's life in order to attain set goals (see Robitschek, 1998). According to Robitschek (1998), PGI includes (1) cognitive aspects such as self-efficacy, beliefs, attitudes and values relating to personal growth and (2) behavioural aspects relating to the application of these cognitions throughout various domains of growth. Ryff (1989) described a person with a high level of PGI as someone who has the intention of constant development. Such a person will see himself as growing, as able to realise his potential, is open to new experiences, is changing in ways that reflect self-knowledge and success, and sees improvement in self and behaviour over time. Personal growth is both an intentional and conscious process (Robitschek, 1998; Robitschek *et al.*, 2012). In contrast to stable personality traits, PGI relates to skills that can be developed for self-improvement (Robitschek *et al.*, 2012) and characteristics that have developmental components and can be changed through interventions (Weigold & Robitschek, 2011).

According to Robitschek (1998), PFI relates to the process of personal growth rather than the outcomes of an individual's efforts to change. PGI can further be described as the skill set for working through self-change (Robitschek *et al.*, 2012). This skill set consists of the following components: how the individual prepares for the self-change; how the individual applies knowledge to plan and implement the self-change; how the individual uses external resources as assistance; and the intention of the individual to change (Robitschek *et al.*, 2012). According to Robitschek (2003), these skills represent the preference to intentionally progress oneself in all life domains. Depending on the skill set, PGI levels can range from slightly skilled to highly skilled (Robitschek & Hershberger, 2005).

Although PGI shares similarities with constructs such as grit (the continuous effort to reach long-term goals through adversity) (Duckworth, Peterson, Matthews & Kelly, 2007), there are important differences between these constructs. A core difference relates to the fact that PGI involves the use of a skill set to change intentionally (Robitschek *et al.*, 2012), whereas grit relies on a central drive (Duckworth *et al.*, 2007). Correspondingly, although high levels of PGI are related to better goal-setting orientation (Klockner & Hicks, 2008), PGI differs from goal setting in two essential ways: firstly, by definition, the main focus of PGI is personal growth (Robitschek, 1998) and not general goal setting (Klockner & Hicks, 2008); and secondly, PGI not only includes setting goals but also involves the planning of goals and intentionally taking action to reach these goals (Robitschek *et al.*, 2012).

According to Robitschek and Keyes (2009), persons with higher levels of PGI normally demonstrate higher levels of psychological well-being. High levels of PGI are also associated with people who have increased healthy coping (Robitschek *et al.*, 2012; Robitschek & Kashubeck, 1999), decreased depression levels (Robitschek & Anderson, 2011; Robitschek & Kashubeck, 1999) and greater life satisfaction (Stevic & Ward, 2008). Furthermore, PGI correlates with all

the subscales of the positive mental health scale, namely, personal growth and autonomy, interpersonal skills, global affect, emotional support, general coping and spirituality (Vaingankar *et al.*, 2011), as well as curiosity, self-compassion, optimism and happiness (Neff, Rude & Kirkpatrick, 2007).

The intention to grow as a person is applicable to all kinds of people, regardless of status. According to Allport (1961), the capacity to adapt and change is an important characteristic of a healthy personality. The extent to which individuals seek opportunities to grow is influenced by their level of PGI (Robitschek & Cook, 1999). According to Robitschek and Kashubeck (1999), PGI levels are a crucial factor in measuring the degree to which the person has benefitted from the growth opportunities that were presented. PGI is therefore an important characteristic to consider when training workplace counsellors, because helping others implies facilitating a process of growth. It is essential for I-O psychology students to become aware of their own PGI as a first step towards being trained as workplace counsellors.

The personal growth initiative scale

The PGIS was originally developed by Robitschek (1998) to assess the personal growth of adults experiencing personal or vocational transitions. The scale has item response options on the nine-item single-factor instrument ranging from 0 (definitely disagree) to 5 (definitely agree). The items are all stated in a positive direction. The PGIS is a unidimensional scale that has been proved to have sound psychometric properties in terms of validity and reliability. Various studies using longitudinal, experimental and cross-sectional designs have confirmed the unidimensionality and construct validity of the PGIS (see Bott & Duffy, 2015; Meyers, Van Woerkom, De Reuver, Bakk & Oberski, 2015; Oluyinka, 2011; Robitschek, 2003; Sanders, Van Oss & McGeary, 2015). The PGI has also been proved to have predictive validity in that it can significantly predict calling (Bott & Duffy, 2015) and students' attitude towards seeking professional help (Oluyinka, 2011). Reported reliability coefficients range between 0.74 and 0.90 (see Bott & Duffy, 2015; Meyers *et al.*, 2015; Oluyinka, 2011; Robitschek, 2003; Sanders *et al.*, 2015).

The PGIS has not been validated within the South African context and therefore the following hypothesis was set for this study:

Hypothesis 1: The PGIS has acceptable construct validity and consists of a unidimensional factor structure and has acceptable inter-item reliability.

Personal growth initiative amongst students

Research studies have identified various levels of PGI amongst students at tertiary institutions (see Meyers *et al.*, 2015; Oluyinka, 2011; Robitschek, 2003; Sanders *et al.*, 2015). Within these student samples, PGI has been proved to correlate with social anxiety (Hardin, Weigold, Robitschek & Nixon, 2007), positive affect (Hardin *et al.*, 2007; Robitschek &

Keyes, 2009), negative affect (Hardin *et al.*, 2007), psychological well-being (Ayub & Iqbal, 2012; Robitschek & Keyes, 2009), psychological distress (Ayub & Iqbal, 2012), presence of life meaning (Bott & Duffy, 2015), calling (Bott & Duffy, 2015), career decision self-efficacy (Bott & Duffy, 2015), vocational identity (Robitschek & Cook, 1999), various coping strategies (Robitschek & Cook, 1999), hope (Shorey, Little, Snyder, Kluck & Robitschek, 2007), happiness (Robitschek & Keyes, 2009) and life satisfaction (Robitschek & Keyes, 2009).

When I-O psychology interns enter the workplace to start their internship, a significant amount (15%) of the internship includes workplace counselling as part of the career psychology and wellness domain stipulated in Form 218 (HPCSA, 2011). Interns are expected to conduct basic counselling, diagnose workplace-related psychopathology (e.g. burnout) and general psychopathology (e.g. psychological trauma) and refer appropriately, and to assist employees with physical and psychological health challenges that impact their wellness and well-being (e.g. HIV-AIDS) (HPCSA, 2011). Preparing I-O psychology students for their internships and subsequent careers as I-O psychologists should therefore include identifying and developing I-O psychology students' intrapersonal awareness through determining their level of PGI. Findings by Meyers *et al.* (2015) and Sanders *et al.* (2015) also indicated that interventions can increase students' PGI, illustrating the relevance and applicability of PGI within training programmes for future I-O psychologists.

Although previous international studies indicate that high levels of PGI can lead to numerous positive outcomes for students, only one study (Prinsloo, 2008) utilising the PGI appears to have been conducted in South Africa. Prinsloo's study utilised the PGI to develop a training programme for student self-regulation and did not report the students' PGI results. There is thus no research available regarding the PGI levels of South African students. The following hypothesis was therefore set for this study:

Hypothesis 2: PGI is prevalent amongst I-O psychology students.

Demographic differences with regard to PGI

Robitschek *et al.*'s (2012) review of research found that the PGIS displayed no significant gender differences in terms of descriptive statistics. However, frequent gender differences have been found in the relationships between PGI and other constructs such as internal locus of control (see Whittaker & Robitschek, 2001). Although most studies do not report significant gender differences in relation to PGI, the non-significant differences that have been reported appear to be context specific as some studies showed similar levels of PGI (Luyckx & Robitschek, 2014), whilst other studies found that men reported slightly higher levels of PGI than women (Hardin *et al.*, 2007; Whittaker & Robitschek, 2001) or slightly lower levels of PGI than women (Oluyinka, 2011; Robitschek & Cook, 1999; Robitschek & Keyes, 2009). Given the varied results relating to PGI and gender, it was deemed important

to investigate possible gender differences in relation to PGI within the South African student sample.

Tertiary education can be described as a period of time in a student's life where life transition takes place and where the student will forge his or her adult identity; this is often a time of deliberate self-development and self-change (Kiecolt & Mabry, 2000). It is therefore understandable that most of the PGI-related studies have used student samples at tertiary institutions (see Ayub & Iqbal, 2012; Bott & Duffy, 2015; Hardin *et al.*, 2007; Luyckx & Robitschek, 2014). Because students tend to enter university as youths and exit as young adults, it could be expected that there will be differences in the levels of PGI amongst the various age groups within a South African student sample.

Senior and Bhopal's (1994) review of literature produced an overarching definition for 'ethnicity' as a concept that 'implies one or more of the following: shared origins or social background; shared culture and traditions that are distinctive, maintained between generations, and lead to a sense of identity and group; and a common language or religious tradition' (p. 327). In South Africa, there are various languages that consist of various cultures (e.g. Afrikaans speakers are mostly white people and mixed race people, whereas the English groups consist of white, mixed race and Indian people) (see Nel *et al.*, 2012), and therefore in this study the reported language groups represent the ethnicity of the participants. Previous studies have shown that similar mean scale scores were produced by the PGIS across various ethnic groups (e.g. Robitschek, 1998, 1999). Some evidence also indicates that PGI might differ across cultures; for instance, high levels of social desirability were indicated by Mexican Americans with high levels of PGI, whereas these constructs were not applicable to European Americans (Robitschek, 1998).

The above discussion leads to the following hypothesis:

Hypothesis 3: Differences in PGI for I-O psychology students exist based on different demographic groups (gender, age and ethnicity).

Research design

Research approach

This research was conducted using a quantitative approach. The principle of quantitative research is to measure and observe a phenomenon and create correlation variables by using statistical measures (Polit & Beck, 2008). A randomised cross-sectional survey design was used to collect primary data. This design involves measuring several participants at one point in time (Bryne, 2001).

Research method

In this section, the research participants, measuring instrument, research procedure and statistical analysis are discussed.

Research participants

The population ($N = 568$) consisted of students studying I-O psychology at a higher education institution in South Africa. A purposive non-probability sampling method was used to identify the sample. The participants were mainly female (62%) and most of the participants were 19 years of age (52%). The majority of the participants were white people (74%), whilst the Indian race group was under-represented in relation to the rest of the sample (0.5%). In terms of language, Afrikaans was the most prevalent home language (79%), whilst English represented 9% of the sample and the Bantu languages (Sepedi, Sesotho, Setswana, isiXhosa, isiZulu and Xitsonga) represented approximately 11% of the sample.

Measuring instruments

In this study, the following measuring instruments were used.

Biographical questionnaire: Biographical questions were included in the questionnaire to gather information concerning participants' gender, age and home language.

Personal growth initiative scale¹: The participants' PGI was measured using the PGIS (Robitschek, 1998). The measure assesses an individual's intentional and active involvement to change and develop as a person (Robitschek, 1999). The PGIS consists of nine items, including 'I know how to change specific things that I want to change in my life' and 'I have a good sense of where I am headed in my life'. Responses are given on a Likert-type scale ranging from 1 (definitely disagree) to 6 (definitely agree). The total scores on the PGIS are calculated by taking the sum of the responses on all nine items; possible scores range between 9 (low) and 54 (high). High scores indicate high levels of PGI. Robitschek (1999) reported suitable internal consistency coefficients ranging from 0.78 to 0.80.

Research procedure and ethical considerations

The research proposal underwent a rigorous ethical clearance evaluation at the tertiary education institution before data collection commenced with students. After the clearance was granted, students studying I-O psychology were approached during class each year from 2012 to 2014 and invited to participate in the study. Hard copies of questionnaires were given to the students with an accompanying letter explaining the objectives, motivation and importance of the study, informed consent and ethical aspects. The students had 1 week time to complete the questionnaire and were then asked to submit the document during their class session. The confidentiality of the participants was emphasised and participation in the study was voluntary.

1. Robitschek *et al.* (2012) adapted the PGIS into the PGIS-II and found that the PGIS-II closely matches the PGI theory and makes a critical contribution to the personal growth literature. This study was conducted in 2012 before the development of the PGIS II and therefore the PGIS was used.

The original unidimensional PGIS was utilised in this study because the assessment of the participants commenced in 2012, prior to the development of the PGIS-II by Robitschek *et al.* (2012). It was deemed advisable to use the same instrument to gather the data over the 3 year period to ensure consistency of the research procedure.

Statistical analysis

The statistical analysis of the study was carried out using the SPSS software package (IBM SPSS Statistics for Windows, 2012). Confirmatory factor analysis (CFA) was used to investigate the factor structure of the PGIS. The estimations of the coefficients were calculated using maximum likelihood estimation and the following goodness-of-fit indices with their respective cut-offs were examined (see Brown, 2006):

- a non-significant chi-square statistics with the CMIN/DF < 5
- the comparative fit index (CFI) and the Tucker–Lewis index (TLI) should have values close to and greater than 0.95 to indicate a good fit
- the root mean square error of approximation (RMSEA) value should ideally be 0.06 or less than that to indicate a good fit.

The Cronbach's alpha coefficient was calculated to determine the PGIS' inter-item correlation. Descriptive statistics (e.g. mean scores, standard deviations, skewness and kurtosis) were used to determine the normality of the items. The mean values and standard deviations of the nine PGI items, as well as the PGI total score, were used to investigate the prevalence of PGI amongst students. An independent-samples *t*-test was used to determine whether significant differences ($p < 0.05$) existed in PGI between the two genders. One-way between-groups analysis of variance (ANOVA) was used to determine whether significant differences existed regarding PGI between the various demographic groups (gender, age and ethnicity) (see Pallant, 2011). One-way between-groups ANOVA analyses were also used to determine specific differences if any (e.g. statistical differences) (Field, 2005). Post hoc comparisons using Tukey's honest significant difference (HSD) test were used to identify where the differences lie (Pallant, 2011). The effect size for the results was calculated using the eta-squared statistic, by dividing the sum of squares between groups by the total sum of squares (small = 0.01, medium = 0.06 and large = 0.14) (see Pallant, 2011).

Results

CFA results supported a unidimensional factor structure within the current sample ($\chi^2 = 118.00$, $p = 0.000$, CMIN/DF = 4.37, CFI = 0.97, TLI = 0.95 and RMSEA = 0.08). The PGIS' Cronbach's alpha coefficient for the current study was 0.91, indicating an excellent reliability.

The descriptive statistics of the nine PGIS items and the total scores are presented in Table 1.

According to Table 1, the scores for the PGIS were normally distributed with no evidence of extreme skewness and kurtosis. The participants indicated that they mainly agreed with all the PGI statements ($M = 4.15$; $SD = 0.82$).

The independent *t*-test results for the PGIS items between males and females in terms of their PGI are displayed in Table 2. One participant did not indicate his or her gender and was omitted from the analysis.

The results showed significant differences between males and females with regard to PGIS3, PGIS5, PGIS7 and the PGIS total score. It was noticeable that the female students consistently scored higher in terms of PGI than their male counterparts.

Then, the one-way between-groups ANOVA was conducted to investigate the impact of age on PGI, on both item and the total score level (Table 3). Two participants did not indicate their age and were omitted from the analysis. In addition, because there was only one individual in the 27-year category, this individual was also omitted from the ANOVA analysis because it requires more than two cases per category.

There were statistically significant differences at the $p < 0.05$ level in all but two PGIS scores (PGIS1 and PGIS8) for all the age groups. However, despite reaching statistical significance, the actual differences in mean scores between the various groups for the various items were small. Calculating the effect sizes using eta-squared statistics produced values between 0.02 and 0.04. The results for the post hoc comparisons using Tukey's HSD test are presented in Table 4.

According to Table 4, significant differences existed in terms of age groups for the following items: PGIS3 (between the age groups 19 and 22, 20 and 22, and 21 and 22), PGIS4 (between the age groups 21 and 24), PGIS5 (between the age groups 20 and 22) and PGIS6 (between the age groups 22 and 26).

Finally, the one-way between-groups ANOVA results for the PGIS items and the PGIS total score are presented in

TABLE 1: Descriptive statistics of the nine-Item PGIS among I-O Psychology students ($N = 568$).

Item	Mean	SD	Skewness	Kurtosis
PGI1	4.14	1.08	-0.55	0.26
PGI2	4.25	1.06	-0.65	0.36
PGI3	4.03	1.07	-0.29	0.02
PGI4	4.06	1.10	-0.25	-0.10
PGI5	4.34	1.04	-0.65	0.63
PGI6	4.02	1.12	-0.42	-0.01
PGI7	4.35	1.09	-0.81	0.83
PGI8	3.98	1.14	-0.48	0.15
PGI9	4.17	1.08	-0.63	0.28
Total PGIS	37.34	7.42	-0.34	0.28

PGIS, personal growth initiative scale; SD, standard deviation.

TABLE 2: Independent *t*-test results for the PGIS items for the I-O Psychology students between males (*n* = 214) and females (*n* = 353).

Item	M	SD	<i>F</i>	<i>T</i>	<i>df</i>	<i>p</i> -value	Mean difference
PGIS1	-	-	0.00	-1.92	565	0.06	-0.18
Males	4.03	1.12	-	-	-	-	-
Females	4.21	1.05	-	-	-	-	-
PGIS2	-	-	0.09	-1.64	565	0.10	-0.15
Males	4.15	1.05	-	-	-	-	-
Females	4.30	1.07	-	-	-	-	-
PGIS3	-	-	1.29	-2.10	565	0.04	-0.19
Males	3.91	1.10	-	-	-	-	-
Females	4.10	1.04	-	-	-	-	-
PGIS4	-	-	2.20	-1.01	565	0.31	-0.10
Males	4.00	1.05	-	-	-	-	-
Females	4.10	1.13	-	-	-	-	-
PGIS5	-	-	0.11	-2.31	565	0.02	-0.21
Males	4.21	1.05	-	-	-	-	-
Females	4.42	1.03	-	-	-	-	-
PGIS6	-	-	0.00	-1.88	565	0.06	-0.18
Males	3.91	1.11	-	-	-	-	-
Females	4.09	1.12	-	-	-	-	-
PGIS7	-	-	0.17	-2.63	565	0.01	-0.25
Males	4.19	1.14	-	-	-	-	-
Females	4.44	1.05	-	-	-	-	-
PGIS8	-	-	0.00	-0.24	565	0.81	-0.02
Males	3.97	1.13	-	-	-	-	-
Females	3.99	1.15	-	-	-	-	-
PGIS9	-	-	0.78	-1.22	565	0.22	-0.11
Males	4.10	1.05	-	-	-	-	-
Females	4.21	1.10	-	-	-	-	-
PGIS total score	-	-	0.01	-2.17	565	0.03	-1.39
Males	36.47	7.36	-	-	-	-	-
Females	37.86	7.43	-	-	-	-	-

PGIS, personal growth initiative scale; M, mean; SD, standard deviation.

TABLE 3: One-way between-groups ANOVA results for the PGI items and the different age Groups for the I-O Psychology students (*N* = 568).

Item	Variable	18 years	19 years	20 years	21 years	22 years	23 years	24 years	25 years	26 years	<i>F</i>	<i>p</i> -value
<i>N</i>	-	8	292	105	72	52	23	6	4	3	-	-
PGIS1	M	4.00	4.15	3.99	3.99	4.38	4.13	5.17	4.75	5.00	1.92	0.06
	SD	0.76	1.03	1.08	1.20	1.07	1.01	1.17	0.96	1.00		
PGIS2	M	3.75	4.25	4.08	4.14	4.50	4.35	5.17	5.25	5.00	2.28	0.02*
	SD	1.67	0.97	1.11	1.14	1.15	1.03	1.17	0.96	1.00		
PGIS3*	M	3.97	3.91	3.93	4.54	4.13	5.17	4.50	4.33	4.03	2.19	0.07
	SD	0.95	1.12	1.19	1.20	1.06	1.17	0.58	1.53	1.07		
PGIS4	M	4.50	4.03	3.91	3.85	4.37	4.44	5.33	4.25	4.67	2.80	0.01*
	SD	1.14	1.05	1.08	1.21	1.07	0.99	0.82	1.50	1.15		
PGIS5	M	4.63	4.32	4.10	4.22	4.75	4.48	5.33	4.75	4.67	2.86	0.00*
	SD	1.06	0.96	1.11	1.14	1.03	1.04	0.82	0.96	1.15		
PGIS6 ^a	M	4.13	4.07	3.91	3.81	4.39	3.96	4.67	4.00	2.33	1.74	0.15
	SD	1.25	1.02	1.08	1.30	1.22	1.15	1.03	1.41	1.15		
PGIS7	M	4.38	4.37	4.12	4.19	4.69	4.39	5.33	4.75	4.67	2.15	0.03*
	SD	0.52	1.00	1.18	1.23	1.20	0.89	0.82	1.26	1.15		
PGIS8	M	3.88	3.96	3.95	3.83	4.31	3.96	4.83	3.50	4.33	1.27	0.26
	SD	1.25	1.09	1.15	1.20	1.11	1.46	1.17	1.00	1.53		
PGIS9*	M	4.25	4.29	4.00	3.39	4.21	3.91	5.00	3.25	4.33	2.40	0.05
	SD	1.28	0.97	1.10	1.23	1.30	1.00	0.63	1.26	1.53		
PGIS total score	M	37.25	37.42	35.89	35.89	40.13	37.74	46.00	39.00	39.33	2.87	0.00*
	SD	7.98	6.72	7.41	8.66	8.14	7.17	7.17	8.04	8.50		

ANOVA, analysis of variance; M, mean; PGI, personal growth initiative; PGIS, personal growth initiative scale; SD, standard deviation.

^a, Levene’s test for homogeneity of variances for this item is > 0.05 and the assumption of homogeneity of variance has therefore been violated. The *F* and *p* values as found under the robust tests of equality of means (Welsch) have therefore been reported.

*, *p* ≥ 0.05.

TABLE 4: Significant mean differences between age groups in terms of PGI for the I-O Psychology students ($N = 565$).

Item	Age 1	M	SD	Age 2	M	SD	Mean difference	<i>p</i> -value
PGIS3	19	3.97	0.95	22	4.54	1.20	-0.57	0.01
	20	3.91	1.12	22	4.54	1.20	-0.62	0.02
	21	3.93	1.19	22	4.54	1.20	-0.61	0.04
PGIS4	21	9.85	1.21	24	5.33	0.82	-1.49	0.04
PGIS5	20	4.10	1.11	22	4.75	1.03	-0.65	0.01
PGIS6	22	4.39	1.22	26	2.33	1.15	2.05	0.05

M, mean; PGIS, personal growth initiative scale; SD, standard deviation.

TABLE 5: One-way between groups ANOVA results for the PGIS items and the different languages for the I-O Psychology students ($N = 565$).

Item	Variable	Afrikaans	English	Sepedi	Sesotho	Setswana	isiXhosa	isiZulu	Other	<i>F</i>	<i>p</i> -value
<i>N</i>	-	449	53	5	16	29	9	2	2	-	-
PGIS1	M	4.14	4.25	3.40	4.38	4.35	3.22	3.00	2.50	2.63	0.01*
	SD	1.08	0.92	0.55	0.96	0.97	1.39	1.14	2.12		
PGIS2	M	4.24	4.26	4.20	4.56	4.21	4.00	3.00	4.00	0.68	0.69
	SD	1.08	1.02	0.45	0.96	1.08	1.32	0.00	0.00		
PGIS3	M	4.04	4.09	4.20	4.00	4.00	3.56	3.50	3.00	0.65	0.72
	SD	1.07	1.08	0.45	1.10	1.10	1.13	0.71	1.41		
PGIS4	M	4.09	4.00	3.80	4.00	4.00	3.56	3.00	4.00	0.66	0.71
	SD	1.09	1.14	0.45	1.14	1.07	1.33	1.14	1.14		
PGIS5	M	4.35	4.30	3.60	4.94	4.28	4.22	2.50	3.50	2.28	0.03*
	SD	1.04	0.91	0.55	0.93	1.16	1.09	2.12	0.71		
PGIS6	M	4.01	3.94	3.80	4.50	4.17	4.00	3.50	3.00	0.86	0.54
	SD	1.12	1.06	0.45	1.21	1.17	1.50	0.71	0.00		
PGIS7	M	4.35	4.25	4.20	4.69	4.41	4.67	3.50	2.00	1.94	0.06
	SD	1.11	0.92	0.84	1.14	1.09	0.71	0.71	1.41		
PGIS8	M	3.10	3.91	3.60	4.25	4.17	3.67	2.00	2.50	1.84	0.08
	SD	1.14	1.13	0.55	0.68	1.23	1.12	1.41	0.71		
PGIS9	M	4.19	3.91	4.00	4.63	4.35	4.11	3.50	2.00	2.29	0.03*
	SD	1.08	1.11	1.00	0.96	1.04	0.60	0.71	1.41		
PGIS total score	M	37.41	36.91	34.80	39.94	37.93	35.00	27.50	26.50	1.67	0.11
	SD	7.63	6.73	3.49	6.52	6.13	6.50	0.71	4.95		

ANOVA, analysis of variance; M, mean; PGIS, personal growth initiative scale; SD, standard deviation.

*, $p \geq 0.05$.

TABLE 6: Significant mean differences between languages in terms of PGIS items for I-O Psychology students ($N = 565$).

Item	Language 1	M	SD	Language 2	M	SD	Mean difference	<i>p</i> -value
PGIS5	Sesotho	4.94	0.93	isiZulu	2.50	2.12	2.44	0.04
PGIS9	Sesotho	4.63	0.96	Other	2.00	1.41	2.63	0.03

M, mean; PGIS, personal growth initiative scale; SD, standard deviation.

Table 5, indicating the presence (or absence) of differences between the different ethnic groups' (as represented by the participants' reported first languages) PGI. Two participants did not indicate their language and were omitted from the analysis. In addition, as there was only one individual in the Xitsonga category, this individual was also omitted from the ANOVA analysis because it requires more than two cases per category.

There were statistically significant differences at the $p < 0.05$ level in three PGIS items for some of the languages (PGIS1, PGIS5 and PGIS9). However, the actual differences in mean scores between the various groups for the various items were small (eta-squared = 0.03), despite reaching statistical significance. The results for the post hoc comparisons using Tukey's HSD test are presented in Table 6.

According to Table 6, significant differences existed in PGIS5 between the Sesotho and isiZulu languages and in PGIS9 between Sesotho and other language groups.

Discussion

Outline of the findings

The general objective of the study was to measure PGI amongst I-O psychology students at a higher education institution in South Africa. The results are discussed in relation to the specific hypotheses set out for this study stating that the PGIS consists of a unidimensional factor structure and has acceptable inter-item reliability (see Hypothesis 1).

The unidimensional PGIS has been proved to be valid and reliable in various international studies (see Robitschek *et al.*, 2012); however, its psychometric properties have not yet been investigated within the South African context. The unidimensional factor structure of the PGIS for the South African student sample was confirmed by the CFA results that yielded acceptable fit. Moreover, the high inter-item correlation coefficient demonstrated that the PGIS is a very reliable scale. These findings are in accordance with the

existing literature (see Bott & Duffy, 2015; Meyers *et al.*, 2015; Oluyinka, 2011; Robitschek, 2003; Sanders *et al.*, 2015) and therefore Hypothesis 1 was accepted. It is thus possible to conclude that although the PGIS was initially developed by Robitschek (1998) to measure the personal growth of adults who were experiencing personal or vocational transitions, it is an ideal instrument to assess the personal growth initiative of South African I-O students.

The results confirmed that PGI was prevalent amongst the participants. The finding regarding the prevalence of PGI amongst a student sample is in accordance with findings from various international studies. To cite some examples, a study conducted by Meyers *et al.* (2015) with the cohort of graduate students in a social sciences master's programme at a Dutch university similarly found that the students mainly agreed with the PGIS statements; Robitschek (2003) also found that college students in a Mexican-American population reported that they 'somewhat agreed' with the PGIS statements; and Sanders *et al.*'s (2015) results indicated that occupational therapy college students in America displayed high levels of PGI. In contrast, Oluyinka (2011) reported that a Nigerian university student population presented more neutral views of their own PGI. The inclination of the participants in this study to agree with all the PGIS statements reflects that the students have moderate to high levels of PGI. The results imply that the I-O psychology students have an interest for change and improvement in order to be more complete and fully functioning individuals. These participants are therefore seemingly inclined to prepare themselves for self-change, apply their knowledge to plan and implement the self-change, tend to use external resources as assistance and, overall, demonstrate the intention to change (Robitschek *et al.*, 2012). The participants' results thus indicate that they display a preference to intentionally progress in all life domains, such as their studies, career paths and personal lives (see Robitschek, 2003). Hypothesis 2 is thus accepted.

Robitschek *et al.* (2012) suggested that it is important for future research to investigate gender differences in PGI. This study found significant differences for gender in terms of certain PGIS items. The results indicate that female participants consistently reported higher (either significantly higher or not) PGI than the male participants. Although Oluyinka (2011), Robitschek and Cook (1999) and Robitschek and Keyes (2009) reported similar results, there is currently no explanation for why female students seem to report higher levels of PGI. A study by Kiecolt and Mabry (2000) investigating students' motivations for self-change found that 'increasing one's self-esteem was a more important motivation for women than for men' (p. 193). It is therefore possible that women report higher PGI because this could increase their self-esteem.

Significant differences were also found in terms of PGI between specific age groups. The results suggest that older students demonstrated a stronger intention to change and are more actively involved in the change process and more inclined to initiate goal setting. PGI entails setting goals, planning goals

and intentionally taking action to reach these goals (Robitschek *et al.*, 2012). The findings suggest that older students have more direction than younger students and plan and actively pursue steps they need to follow to reach certain goals. It is also possible that they have a clearer goal and view of their future as I-O psychologists. The results also indicate that the older students seem to be more comfortable in groups than the younger students. A possible explanation for the higher self-report of PGI in older students could be that the older students are already busy with their postgraduate studies, which in itself is a sign of actively being involved in changing oneself for the better. Furthermore, postgraduate students tend to be more exposed to group work, resulting in them being more comfortable with their role in a group. In contrast, younger students do not yet show readiness to change and grow, which is understandable because they are not yet fully prepared for their role as an I-O psychologist. The younger students might not yet feel ready to pursue goals because their studies are not yet completed. An interesting finding in this study is that the 26-year-old students reported significantly lower self-evaluations in relation to having a specific action plan to help them reach their goals, when compared to the 22-year-old students. A possible explanation could be that the older students feel a measure of uncertainty about their future as I-O psychologists as they are still studying when most of the graduates are 23 years of age. These students might also be in the process of finishing their studies and searching for a job.

Lastly, the findings for PGIS5 ('I know what I need to do to get started towards reaching my goals') and PGIS9 ('I have a plan for making my life more balanced') suggest that the Sesotho-speaking group has higher levels of PGI than the isiZulu-speaking group and the other language groups. These results have not been replicated in other studies and can therefore be regarded as a unique finding of this study. It is important to note that the different languages represent different cultural groups. A previous study indicated that isiZulu speakers are generally part of the Zulu culture, whilst Sesotho (Southern Sotho) speakers are generally part of the Southern Sotho culture (see Nel *et al.*, 2012). Differences in cultures may influence the way in which individuals answered the questionnaire as different cultures regard different things as important. Robitschek (2003) suggested that PGI is relevant across cultures, and this is clearly seen in this finding. Based on the above-mentioned findings, Hypothesis 3 is also accepted.

Limitations and recommendations

This study had some limitations. A first limitation involves considering equal distribution amongst different genders, ages and language groups. To be able to generalise the data, the research could have included I-O psychology students from different universities. The study used students from different backgrounds and as such a language barrier could have acted as a limitation as the questionnaires were administered in English, which is the second or third language for most of the participants. As the study was conducted over a 2 year period, a longitudinal design could have been considered to ensure that age truly had an effect

on increasing PGI levels. However, as the questionnaires were completed anonymously, it was not possible to implement a longitudinal design.

A recommendation for the future training of I-O psychology practitioners with regard to their PGI is to adapt training programmes to focus more on the development of the individual's growth initiative, self-actualisation and optimal functioning. The development of intrapersonal skills is crucial because it can be seen as the fundamental driver of interpersonal skills (Kubica & LaForest, 2014). At undergraduate level, it is necessary to focus on students' knowledge and awareness of PGI theory, whilst at postgraduate level more practical application is needed. Studies concerning language differences in relation to PGI could not be found. Further research concerning the way in which PGI levels differ according to a person's age is recommended.

Practical implications

This study indicated that PGI is prevalent amongst I-O psychology students. It is clear from the results that PGI is relevant for all gender, age and ethnic groups within the I-O psychology student sample. This information can be used to incorporate PGI in the training programmes of I-O psychology students and monitor their development. Using PGI in the development of I-O psychology training programmes can add value in training I-O psychology students to be better counsellors.

Conclusion

A person's predisposition to set clear future-oriented goals and strive for and implement these goals is an important outcome of that person's level of PGI (Shorey *et al.*, 2007). This study's literature review highlighted the importance of being proactive in relation to personal development and suggested that I-O psychologists need to be willing to spend a considerable amount of energy seeking their own identity (Luyckx & Robitschek, 2014). It can be concluded that the PGIS is a valid instrument for measuring I-O psychology students' PGI. The results showed that significant differences exist in relation to various demographic groups and this should be considered when evaluating an I-O psychology student's PGI. Finally, the study echoes Veldsman's (2014) suggestion that having a growth mindset is of major importance for I-O psychologists, because a major aspect of the profession's focus entails nurturing well-adjusted employees and enabling their optimal growth. It is therefore important that such a growth mindset should be fostered as early as possible during I-O psychology students' training.

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Competing interests

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Authors' contributions

A.d.J.v.S. collected and captured the data, and written the manuscript. L.J. supervised the total study, while C.H. conducted the analysis and assisted in the write-up of the results. J.A.N. assisted with the conceptualisation of the study, and co-supervised the write-up of the final manuscript.

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