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## Research Note

## Validation of a motivation survey tool for pharmacy students: Exploring a link to professional identity development

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## ABSTRACT

**Introduction:** Self-determination theory (SDT), which describes a continuum of motivation regulators, is proposed as an appropriate framework to study pharmacy student motivation. The aim was to develop a Pharmacy Motivation Scale (Pharm-S) to determine motivation regulators in undergraduate students and explore a possible link to professional identity development.

**Methods:** The Pharm-S was adapted from the SDT-based, Sports Motivation Scale (SMS-II), and administered to undergraduate students in an Australian pharmacy course. Convergent validity was assessed by conducting a correlation analysis between the Pharm-S and MacLeod Clark Professional Identity Scale (MCPIS-9).

**Results:** Face, content and construct validity were established for the Pharm-S through the analysis of 327 survey responses. Factor analysis extracted four of the six theoretical subscales as proposed by SDT (variance explained: 65.7%). Support for the SDT structure was confirmed by high factor loadings in each of the subscales and acceptable reliability coefficients. Subscale correlations revealed a simplex pattern, supporting the presence of a motivation continuum, as described by SDT. A moderate positive correlation (0.64) between Pharm-S responses and the validated professional identity instrument, MCPIS-9, indicated a possible link between levels of motivation and professional identity.

**Discussion:** and conclusions: Content and structural validity and internal consistency of the Pharm-S confirmed the reliability of the Pharm-S as a valid tool to assess motivational regulators. Pharm-S and the MCPIS-9 were positively correlated, lending support to a link between motivation and professional identity. This suggests a potential role for the Pharm-S as a valid tool to measure pharmacy student professional identity development.

## Introduction

Student professional development in health education has received increased attention in the tertiary sector and is one of four essential educational standards outlined in “Standards 2016,”<sup>1</sup> by the Accreditation Council for Pharmacy Education (ACPE). In 2010, an independent commission into the state of global health education, called for a re-think of professional health education, including a specific focus on the development of professional identity.<sup>2</sup> The World Health Organization highlighted the importance of practice-based experience for identity development in their World Health Report in 2006, citing its value in developing empathetic and confident health professionals.<sup>3</sup> Professional identity formation (PIF) has been recognized as an essential aspect in discipline specific areas with pharmacy,<sup>4–6</sup> nursing,<sup>7,8</sup> dentistry,<sup>9</sup> and medicine<sup>10–12</sup> in particular supporting the role for professional identity

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development.

In their review of professional identity development in higher education, Trede et al.<sup>13</sup> reported a lack of understanding of professional identity formation (PIF) and consequently there were few recommended approaches for facilitating its incorporation into health education. The review also stated that universities needed to consider the role for professional identity development in existing curricula.<sup>13</sup> The American Association of Colleges of Pharmacy Council of Deans (AACP-COD) established the Taskforce on Professional Identity Formation, releasing a definition for PIF in 2014 as being "...the transformative process of identifying and internalizing the ways of being and relating within a professional role."<sup>14</sup> A professional identity formation task force was established by the University of Texas in 2011, with multiple objectives around the definition, teaching and assessment of professional identity. They identified six domains and 30 sub-domains in their development of a PIF framework.<sup>15</sup> Dall'Alba's research into the development of the professional, explained that the journey towards becoming a professional is an individual one, with the aim being to develop the ability to "think, act and feel like a professional".<sup>16</sup> Researchers in medical education in the US have supported this view and stated that a primary goal should be the development of a professional identity.<sup>11</sup> Cruess et al.<sup>18</sup> have proposed a revision of Miller's pyramid of clinical competence,<sup>17</sup> placing identity at the apex, highlighting the importance of both cognitive and affective development in identity formation.<sup>18</sup> Cruess et al.<sup>18</sup> have also called for research into approaches that gauge professional identity development, alongside the traditional markers for professional conduct.

In the search for an appropriate framework from which to approach professional identity development, this study proposes that self-determination theory (SDT)<sup>19-21</sup> may serve as a basis for a tool to monitor professional identity development. SDT (an organismic dialectical theory) developed by psychologists Ryan and Deci in the 1980s, is a long established and well regarded theory that has been applied widely in the areas of education, parenting, health care and many other disciplines.<sup>22</sup> It is a theory of human motivation that describes a continuum of six motivation regulators ranging from least motivated (amotivation) to highly motivated (intrinsic motivation). Extrinsic motivation completes the continuum between amotivation and intrinsic motivation and is characterized by four sub-classes, which vary in their relative degree of autonomy and self-determination (see Fig. 1).

The four sub-classes, in order of increasing autonomy are external, introjected, identified, and integrated regulation. External regulation describes the type of motivation which is governed by external factors such as monetary reward or the threat of punishment. In this sub-class control is exerted by others upon the individual, whereas in the introjected sub-class the control moves to the individual. Motivating factors such as self-worth and guilt and shame typify this sub-class, where the process of internalization into the self begins. For the identified sub-class, motivation regulation develops as a reflection of the value system of the person. Individuals choose to engage because they see it as being of value to their health and well-being for example. The final sub-class of extrinsic regulation is integration, where the individual has transformed from being externally regulated by another, to being self-regulated. In this class the individual identifies with the inherent behaviors and integrates them with their sense of self.

Importantly, SDT describes a relationship between motivation for an activity and individual internalization of that activity, or incorporation into one's sense of self. For example, the transition from amotivation through to intrinsic motivation occurs through a process involving internalization and integration, where the activity or pursuit becomes part of the individual's identity:

According to SDT, these different motivations reflect differing degrees to which the value and regulation of the requested behavior have been internalized and integrated. Internalization refers to people's "taking in" a value or regulation, and integration refers to the further transformation of that regulation into their own so that, subsequently, it will emanate from their sense of self.<sup>20</sup>

SDT explains that high levels of motivation are seen in individuals who are supported in three main areas; competence, relatedness, and autonomy. The role of SDT in professional development may be particularly relevant, as the same elements that nurture human motivation, could also be considered as core characteristics of the practicing professional.

A collaboration between the creators of SDT and psychologists in Canada resulted in the development of the sports motivation scale<sup>24</sup> (SMS). This instrument examined motivation regulators present in athletes in various sporting disciplines. It consisted of 18

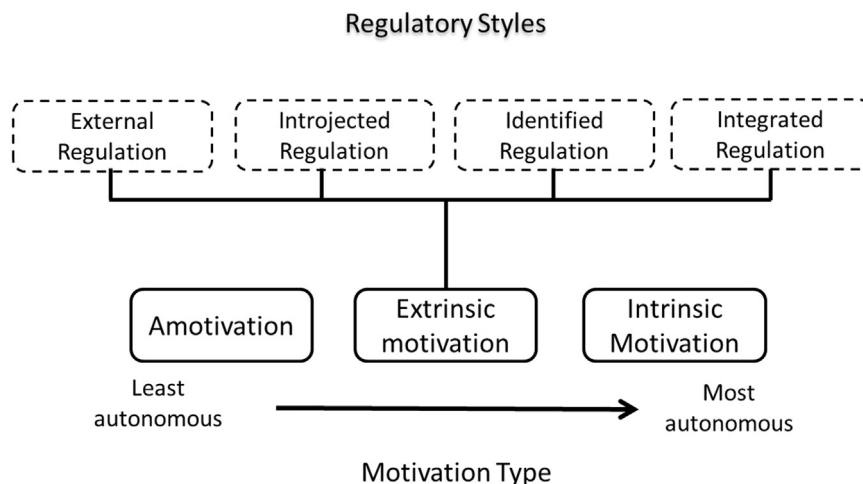


Fig. 1. The Self-determination continuum by Deci & Ryan.<sup>23</sup>

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