CHAPTER 1

INTRODUCTION

Education is a gradual process of acquiring critical thinking, capabilities and expertise which helps the individual to attain personal goals and work productively for the betterment of mankind. It is not confined to amass knowledge, skills and competence only rather it is the sum total of mastery, proficiency, values and wisdom, an individual procures through different formal and informal means at various stages of his life.

Khodabocus (2016) stated that, “The central purpose of education is to foster skills and values for individuals to successfully fit into society and engage in productive activity to earn a living”. Likewise, according to Good and Merkel (1973) education can be defined as, “the aggregate of all the processes by which a person develops abilities, attitudes and other forms of behaviour of practical value in the society in which s/he lives; the social process by which people are subjected to the influence of selected and controlled environment, so that they may obtain social competence and optimum individual development”.

Education is the backbone of a nation and a powerful instrument which sensitizes its people and makes them aware about the prevailing problems in the society. It enables them to think critically and to find relevant solutions to the problems.

Indian education system is being broadly divided into three levels (Table 1.1)

- Primary Level: It includes first to eighth class.
- Secondary Level: It includes ninth to twelfth class.
- Tertiary Level: It includes under graduation, post-graduation, M. Phil and Ph.D. programs.

The tertiary level is also known as ‘higher education’. It can be considered as the milestone for the development of an individual and a key feature for the progress of a society. It provides higher order expertise in the relevant field. In the words of
Dreze and Sen (1995), “Higher education is one of the most important inputs that influence the all round development of any nation, especially in the field of economic, political, social, cultural and spiritual. It enables people to build up their capabilities, which in turn is the primary end and principal means of development”. Tilak (2005) exclaimed that, “the externalities of higher education are indeed immense and they have profound positive effect on economic growth”.

Table 1.1: Structure of Indian Education System

<table>
<thead>
<tr>
<th>Level</th>
<th>Sub levels</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>Pre-Primary</td>
<td>Preparatory</td>
</tr>
<tr>
<td></td>
<td>Primary</td>
<td>1st to 5th</td>
</tr>
<tr>
<td></td>
<td>Upper Primary</td>
<td>6th to 8th</td>
</tr>
<tr>
<td>Secondary</td>
<td>Secondary</td>
<td>9th and 10th</td>
</tr>
<tr>
<td></td>
<td>Higher Secondary</td>
<td>11th and 12th</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Undergraduate</td>
<td>Graduation</td>
</tr>
<tr>
<td></td>
<td>Post Graduate</td>
<td>Masters</td>
</tr>
<tr>
<td></td>
<td>M. Phil</td>
<td>M. Phil</td>
</tr>
<tr>
<td></td>
<td>Ph. D.</td>
<td>Doctoral</td>
</tr>
</tbody>
</table>

Source: Indian Standard Classification of Education (2014) by MHRD

1.1 National and Global Reports on Higher Education

The number of university level institutions have multiplied thirty times from 1950-2015 (MHRD, 2016; Sen, 2016) (Fig. 1.1). The proportion of teachers and students has also increased accordingly (Sen, 2016). All India Survey on Higher Education (AISHE) conducted by Ministry of Human Resource Development (MHRD), in the year 2014-15 reveals that the number of universities has increased from 760 in 2014-15 to 903 in the year 2017-18 (Fig. 1.2). Improving the gross enrollment in higher education is also one of the prime aims. Due to the continuous efforts the gross enrollment ratio has been gradually improving (24.3% in 2014-15 to 25.8% in 2017-18) in the country (AISHE, 2018) (Table 1.2).
According to the International Standard Classification of Education (ISCED) (2011) and Indian Standard Classification of Education (InSCED) (2014), doctorate is the highest level in classification of higher educational programs. It is the highest academic achievement any higher educational institute can offer and is considered as the attainment of mastery over knowledge in a particular discipline (Montalvo-Javé et al., 2016). It enables an individual to work as a researcher or an expert in the relevant field (Törnroos, 2017).

Ph.D. research is an endeavor towards individualistic field research. To achieve doctoral degree it requires submitting thesis, dissertation or equivalent written work which is of publishable quality and represents a significant contribution to knowledge in the respective field of study (ISCED, 2011). The doctoral degree not only benefits the research students but also contribute to the betterment of society (Törnroos, 2017).

Furthermore, Organisation for Economic Co-operation and Development (OECD) (2016) published a report showing a rise in number of new doctorate degree holders across the world in the past twenty years. OECD has a total number of thirty six member countries. India is a non-member of OECD, yet it finds a significant place in the writings of the data related to Ph.D. scholars. The report reveals that India occupies a position in the top five countries of the world in number of graduated Ph.D. scholars. Various researchers exclaimed that, for the development of a knowledge
economy the production of Ph.D. graduates is extremely important (Ng, Muhd, Rahman & Ismail, 2011).

As per All India Survey on Higher Education (AISHE, 2017-18), in the past four years 546201 students were enrolled in Ph.D. research programs in various academic disciplines and 109180 doctorate degrees were awarded to the students in the same period (Fig. 1.2). However, further growth is expected in Ph.D. graduates by the year 2020 (Cryanoski, Gilbert, Ledford, Nayar & Yahi, 2011). Data sources indicated that a large number of students are now showing interest in Ph.D. research to achieve highest level of education which helps them to attain personal goals and ultimately their research contributes to the progress of the nation.

### Table 1.2: Gross Enrollment and Degrees Awarded in Ph.D.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Session</th>
<th>Gross Enrolment</th>
<th>Degrees Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2014-15</td>
<td>117301</td>
<td>21830</td>
</tr>
<tr>
<td>2</td>
<td>2015-16</td>
<td>126451</td>
<td>24171</td>
</tr>
<tr>
<td>3</td>
<td>2016-17</td>
<td>141037</td>
<td>28779</td>
</tr>
<tr>
<td>4</td>
<td>2017-18</td>
<td>161412</td>
<td>34400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>546201</strong></td>
<td><strong>109180</strong></td>
</tr>
</tbody>
</table>

*Source: AISHE reports: 2014-15 to 2017-18*

![Figure 1.2: Gross Enrollment and Degrees Awarded](source: AISHE reports: 2014-15 to 2017-18)
1.2 **Factors involved in Research**

Research is the foundation of knowledge. It is an approach to study, explore, understand and interpret different areas for achieving in-depth knowledge. Research is a scientific method which consists of systematic observation, classification, and interpretation of data (Kumar, 2009). Research can be performed in various fields such as arts, science, language, education, designing and fine arts and much more.

Kothari (2014) suggested some reasons for why people undertake research. He elaborates that “desire to get a research degree along with its consequential benefits; desire to face the challenge in solving the unsolved problems, i.e., concern over practical problems initiates research; desire to get intellectual joy of doing some creative work; desire to be of service to society; and desire to get respected” are some of the major factors which motivates someone to carryout research.

Locke, Freeman and Rose (2018) support the reasons put forth by Kothari (2014) which inspire students to pursue doctoral degree. They further add that thirty two percent of the participants stated that ‘they were interested in the specific subject’, twenty six percent of the participants mentioned that ‘they wanted to improve career options especially in field of research and academics’, twenty one percent of the participants reported that ‘Ph.D. research was a natural step’ and five percent of participants exclaimed that ‘fellowship attracted them to do Ph.D’.

The fundamental goal of research programs, particularly doctoral degree is to develop independent researchers who are capable of adapting to academic, industrial and other workplace settings. The Ph.D. researchers require a diverse interdisciplinary knowledge, skill and attitude to work effectively in the contemporary research scenario (Barnett, 2000; Nowotny, Scott, & Gibbons; 2001). Curiosity, knowledge of research area, familiarity with research problems, time management, writing skills, dedication, resilience and ability to maintain balance between personal and academic life are some of the important factors associated with the researcher which determines the quality of the research work. A huge investment is needed in terms of time, energy and motivation to complete the research viz. collecting literature review, conducting laboratory or field study, concluding experiments, interpreting results and framing research story in preparation for writing the final thesis (Marino, Stefan & Blackford, 2014).

Over a period of time number of higher educational institutes offering Ph.D. degree are increasing and the percentage of students getting enrolled in these programs
are also rising. Despite this, the number of students successfully accomplishing their research seems to be quite low (Mujtaba, Scharff, Cavico, & Mujtaba, 2004). Inability to achieve their goals can have a number of constraints attached to it viz., financial constraints (Adebisi, 2014; Sharip & Ibrahim, 2014) being stuck at a particular stage of research (Kiley, 2009); lack of social support and stress (Jairam & Kahl Jr, 2012); language problem (Harman, 2008; Skotvoll, 2014; Son & Park, 2014), time constraints (Tress, Tress & Fry, 2009; Desmennu & Owoaje, 2018), adverse conditions in institutions (Schillebeeckx, Maricque, & Lewis, 2013), poor mental health conditions, insecurities regarding own competence, unwritten rules of an institution, negative experiences, inability to maintain balance between academic career and family’s expectations (Apple & Dahlgre, 2003). At times these constraints compel an individual to quit his/her research mid-way (Podsakoff, LePine, & LePine, 2007).

These challenges possess the capacity to alter the quality of research and ultimately mental health of the research students (Patterson, Weaver & Trite, 2016). Pyhältö, Toom, Stubb and Lonka (2012) found in their study that students who wanted to discontinue Ph.D. suffered more anxiety, exhaustion and scored higher on self-reported stress scale than those who were not willing to do so. Toews, Lockyer, Dobson and Bronell (1993) also reported that doctoral students suffer more distress and poor mental health conditions.

1.3 Mental Health and Research Students

Mental health difficulties are the growing concern among student population (Castillo & Schwartz, 2013; Milojevich & Lukowski, 2016). Various researches indicated that students suffer poor mental health conditions (Blanco et al., 2008; Milojevich & Lukowski, 2016) as compared to the general population (Nerdrum, Rustøen, & Rønnestad, 2006; Walsh, Feeney, Hussey, & Donnellan, 2010; Moreira & Telzer, 2015). Adverse mental health conditions can be observed in the form of stress, depression and anxiety, (Schraml, Perski, Grossi, & Simonsson-Sarnecki, 2011; Lejoyeux, Richoux-Benhaim, Löhnardt & Lequen., 2011; Boulard, Quertemont, Gauthier & Born, 2012; Nyer et al., 2013; Petrov, Lichstein, & Baldwin, 2014; Feld & Shusterman, 2015; Manjari, 2016; Saleh, Camart, & Romo, 2017). Poor mental well-being in students is also associated with physical disorders (Graziani, Hautekèete, Rusinek & Servant, 2001), low self-esteem (Ditto, & Griffin1993; Malle & Horowitz 1995; Furegato, Cassiano, Campos, & Silva, 2006; Stallman, 2010; Saleh
and poor satisfaction (Tamini & Far 2009; Guneya, Kalafatb, & Boysan, 2010; Kumar, Shaheen, Rasool & Shafi, 2016).

Researches done on mental health of students portray a grim picture. The situation of the research scholars also appears dismal. It has been observed that many PhD students struggle with stress, feelings of isolation, depression, exhaustion, and negative emotions. It adversely affects the quality and quantity of individual’s research output (Levecque, Anseel, Beuckelaer, Heyden & Gisel, 2017). As a matter of fact, the development of a society in every aspect including scientific advancement, social changes, cognitive expansion and growth depends upon the various researches which are being conducted in several research institutions (Rindermann & Thompson, 2011). But some of the research students are no longer willing to pursue a research career because of mental health problems which is a major issue of concern (Stubb, Pyhältö & Lonka, 2014).

The Graduate Student Happiness and Well-being Report compiled by University of California at Berkeley in 2014 reports that sixty seven percent of the research students mentioned that they had ‘felt hopeless’ at least once in the last year (Fig. 1.3). Fifty four percent reported that they were ‘extremely depressed’ that they could not ‘function properly’ and effectively; and around ten percent reported that they even had ‘suicidal thoughts’.

As far as the factors contributing towards the deterioration in mental health among students (Fig. 1.4), nearly half of the research students reported general stress, one fifth reported heavy workload, approximately sixteen percent of the students
reported financial difficulties, approximately twelve percent of the students indicated issues with advisor or supervisor and ten percent of them reported lack of social support or connectedness leading to the feeling of isolation among them. The report is clearly indicating an appalling situation among young researchers.

Further, the Graduate Student Happiness and Well-being report suggested several other factors which affect mental health of research students which are as follows:

i. **Financial difficulties:**
Research students face financial difficulties often due to lack of financial support. Research students, who get financial support in terms of fellowships, sometimes have to wait for long period of time to receive the money from the sources to fulfill their needs. And those who do not get any fellowship or financial support have to depend upon some external source for their monetary requirements. The students who are less satisfied with their financial conditions exhibit more depressive symptoms and low mental health symptoms.

ii. **Career Prospects:**
Individual’s beliefs about his/her career after Ph.D. emerged to be the top predictor of well-being. These beliefs strongly predict the overall life satisfaction and vulnerability towards depression. Students who are optimistic about their career prospects are significantly happier and show fewer symptoms of depression than the students who are pessimistic about their
career prospects. This feeling of optimism remarkably effects the mental health of the research students.

iii. **Living Conditions:**
Perceptions about the living conditions are one of the major predictors of well-being especially life satisfaction and depressive symptoms. Individuals who are satisfied with residential facilities provided to them, such as campus or hostel, or recreational sources, show less depressive symptoms and are more satisfied with life.

iv. **Academic Engagement:**
Research students who are preoccupied with their day-to-day work and are busy in doing some work have higher life satisfaction and fewer depressive symptoms than those who are not engaged in their day-to-day work.

v. **Social Support:**
In well-being researches, social relationships and social connectedness came out to be an important determinant of happiness and good mental health. The research students who mentioned about having significant other with whom they can share their innermost worries and fears, showed substantially fewer depressive symptoms than those who don’t perceive anyone available to share worries and anticipations. After financial difficulties, social support, loneliness and a desire for social groups and events are the most prominent factors affecting mental health of the research students.

vi. **Academic Progress:**
Research students who felt that they are progressing in their academics, they are completing their assignments in time, are putting enough efforts towards their research show higher life satisfaction and fewer symptoms of low mental health as compared to those who perceive their efforts insufficient in achieving their goals.

vii. **Feeling Valued & Included in the Department:**
Research students who perceive being valued and included by fellow students and faculties in their department show more positive mental health symptoms and satisfaction with life.
viii. **Supportive supervisor or advisor:**

Students who perceive their supervisors as ‘real mentors’ and ‘supportive’ show more satisfaction with life and positive mental health. Supervisors’ influence other predictors like academic progress and preparation, motivation, career prospects, feeling valued and included in the department and also the self-esteem of the research students.

ix. **Physical health:**

Physical health is a major predictor of students’ mental health, particularly depressive symptoms. It is also a strong predictor of life satisfaction. Overall health is the interplay of both physical and mental health. The student who is physically healthy, his/her mental health also improves. The student who is mentally fit, pays attention toward his physical wellbeing also.

x. **Sleep Quality:**

Research students report sleeplessness at night resulting in lack of alertness and energy during the day. It has been seen that simply improving sleep quality substantially reduces depressive symptoms and improves mental health.

The above discussion clearly indicates that more and more students are now showing interest in doctorate degree programs. But the challenges associated with Ph.D. research in some or the other way adversely affects their mental health conditions and overall well-being. There are plenty of researches who report that students suffer mental health concerns like depression, anxiety, distress, lack concentration and poor sleep quality. But there is lack of research data which analyze the contributory factors for mental health difficulties among research students for example financial difficulties, lack of social support and quality of life of research students. Therefore, the present investigation is an effort to bridge this gap.

1.4 **Statement of the problem**

The aim of the present research was to investigate the correlates of mental health among research students. For this purpose, the study was designed to assess the differences on mental health, depression, anxiety, stress, quality of life, self-esteem and social support among fellowship holder and non-fellowship holder research students in Panjab University, Chandigarh. Further the research also aimed to study the gender differences on mental health, depression, anxiety, stress, quality of life, self-esteem and social support in research students.